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CLINICAL, PATHOLOGICAL AND EXPERIMENTAL OBSERVATIONS ON THE "MYSTERIOUS DISEASE," A CLINICALLY ABERRANT FORM OF ACUTE POLIOMYELITIS.

By **A. Breinl, M.D.,**

From the Australian Institute of Tropical Medicine, Townsville.

Within the last year there appeared in parts of Queensland and New South Wales, a number of cases of a mysterious disease, apparently not observed previously, which had an alarming mortality. Litchfield[1] recorded the first case from Broken Hill. The patient was a child, two years of age, which "had been taken ill suddenly and within three hours was in convulsions with a temperature of 103° F." From a blood culture a Gram-negative diplococcus was obtained, which unfortunately was not further studied. He pointed out at the time that these mysterious cases were still occurring in considerable numbers in the neighbourhood of Bourke, and that more recently the disease had affected adults as well as children. In a letter[2] I drew attention to the fact that cases with similar clinical symptoms occurred about the same time in Townsville, and that the post-mortem appearances of the brain and spinal cord of the first case were macroscopically and microscopically identical with those of a typical case of acute poliomyelitis, with extensive involvement of the grey substance of the brain. This letter was replied to by Cleland and Bradley,[3] who had examined sections of the medulla of a patient in the country case in which lesions indistinguishable from those of acute anterior poliomyelitis were present, and recorded in two other cases the occurrence of marked paresis of the limbs as an aftermath of the acute infection, and considered the possibility "that it may be due to some virus allied to that of acute anterior poliomyelitis, producing a disease which has hitherto not been differentiated from the latter."

A further contribution was made by Burnell,[4] describing an epidemic of an obscure disease at Broken Hill, with a high mortality; out of fifteen cases twelve ended fatally.

The patients suffered from great weakness, and after a period of from one to two days passed into a condition of semi-consciousness. He stated that the patient, on admission to the hospital, might be lying with both eyes open, apparently in very little pain, would on request put out his tongue, but was unable to grasp longer or complicated sentences. "A marked feature was the peculiar resistiveness, the patient gently but firmly resisting any manipulations one may attempt to make with his limbs." The temperature was elevated, ranging between 101° and 107° F.. The day following the mental condition had changed, a state of profound unconsciousness had set in, with head retraction and intermittent clonic convulsions, followed later by increase in respiration, and frequently a typical respiratory death supervened. The duration of the disease in fatal cases was three to five days. In the non-fatal cases the patients never showed the respiratory embarrassment, and in two of them, after weeks of apyrexia, delusions were still present. The brain was examined in three cases, in two of them the meninges were normal, in the third there was slight injection of the *pia mater* and marked œdema of the brain substance. Otherwise the internal organs appeared normal. The cerebro-spinal fluid of seven cases out of the ten gave culturally a short, non-motile, non-spore-forming bacillus, which proved non-pathogenic to guinea-pigs and rabbits.

Cleland, Bradley and Buckley[5] in a further communication gave a short account of the mysterious disease in New South Wales. The clinical symptoms were the same as those recorded by other observers. After one or two days of malaise the patients became stuporous, semi-comatose or irritable, the temperature rose to 39.5° C. (103° F.), or even 41.7° C. (105.1° F.), and tetanic convulsions preceded death, which occurred within a week of the onset. They stated that "in the non-fatal cases there was a gradual and irregular fall of temperature and a slow improvement. In one or two cases there was paresis of the muscles of the extremities." The lumbar puncture gave a clear fluid in the majority of cases. The total mortality was 61%. The post-mortem revealed in a few cases enlarged Peyer's patches of the intestinal mucosa and enlarged mesenteric lymph glands. "Some fine punctate hæmorrhages were present in one brain, definite œdema in another, and congestion in three brains," but no obvious meningitis. The sections of the medulla and the upper spinal cord of one case (that of a child which had died at Narrabri) showed various areas of round cell infiltration, with destruction of nerve cells and congestion, a condition "very suggestive of the lesions found in acute anterior poliomyelitis." Negative results were obtained on injecting an emulsion of parts of the brain and spinal cord into the peritoneal cavity of a monkey. The authors pointed out that the cerebro-spinal fluid from other cases failed to produce any ill effect on monkeys, guinea-pigs and rabbits, and suggested the term "cerebral fever" for the condition.

Anderson[6] recorded careful clinical observations of fourteen cases of the mysterious disease from the Goondiwindi district in Southern Queensland, of which six ended fatally. Twelve of his patients were under ten years of age. The onset of the disease was sudden, with headache, high fever and convulsions, followed by deep coma. Two of his patients developed unilateral paresis, from which they completely recovered.

Mathewson[7] had under his care at the Brisbane Children's Hospital seventeen patients suffering from a similar disease, out of which number eleven died. The onset of the disease was mostly sudden. A child, previously healthy, developed a high tempera-

ture and was seized with convulsions, which continued with intervals of semi-consciousness for days, the child afterwards lapsing into a state of stupor and finally deep unconsciousness. In other cases the onset was insidious, the child complaining of headache and vomiting, and passing afterwards into the stages of stupor and unconsciousness. Three of the six patients who recovered, had not regained normal intelligence.

The bacteriological examination of the cerebro-spinal fluid proved negative. The pathological report on the histological examination of the brain and a small portion of the upper cervical region of the cord of one case by Latham, described the main pathological changes as a "widespread congestion of the blood vessels of the brain and spinal cord and an infiltration in their adventitial sheath, with large and small mononuclear cells, including plasma cells." The ganglion cells appeared to have been but little affected, even those situated in the midst of hæmorrhages or islet of cells.

During the months of March, April and May, 1917, a number of patients were admitted to the Townsville Hospital suffering from a disease, the symptoms of which did not entirely agree with any hitherto described ailment, but corresponded in all details to the cases of the "mysterious disease" or "cerebral fever." The high mortality—out of seven cases five ended fatally—and the obscure nature of the disease warranted a careful clinical, pathological and experimental investigation.

Circumstances enabled me to obtain autopsies on five cases, and the brain and spinal cord of these cases was subjected to further histological examination. Within the last month two further cases of the same disease were observed in Townsville. Both ended fatally, and the brain and spinal cord were utilized for further investigation. The interest which the cases in question have aroused, and their obscure nature, warrant a publication of the results of the clinical and pathological observations in detail.

Case 1.—A boy, seven years of age, was admitted on March 6, 1917 (*see* Chart I.). The history showed that the boy had been "off colour" for a few days prior to admission. On March 4 he had a fit, accompanied by high fever, after which the patient became unconscious for a short time. The following day his general condition was slightly improved, and he had, to a certain extent, regained consciousness. The improvement, however, was only temporary, and his condition becoming worse, he was taken to the hospital.

On admission, the boy was semi-conscious, and looked very ill. The physical examination did not reveal any striking changes, beyond a slight stiffness of the neck and an expression of pain in his face whenever his arms or legs were moved. His tongue was furred. The Widal reaction of his blood serum was negative; the urine contained only traces of albumin, but no sediment.

In the course of the following two days his general condition remained the same, and on the third day the patient appeared slightly improved; he slept peacefully during the day, but was restless at night, throwing himself about in the bed, calling out, and repeatedly attempting to get out of bed. On the fifth day after admission his temperature had become nearly normal, he began to take interest in his surroundings and answered simple questions sensibly, but was unable to grasp the meaning of more complicated sentences, and took nourishment better. The improvement was, however, only temporary. In the course of the morning of the sixth day his temperature rose, and convulsions of short duration set in, followed by unconsciousness; in the free intervals the legs and arms showed muscular twitchings. The neck was rigid; neither Babinski's nor Kernig's sign was present, and the patellar reflexes were not exaggerated; the respiration was deep and stertorous, the rate increased to about thirty-two. On account of the inability of the patient to swallow, rectal nutrient enemata were administered.

The lumbar puncture, performed on 12th, yielded a clear cerebro-spinal fluid, apparently not under increased pressure. The sediment consisted of a small number of lymphocytes only, and proved sterile on bacteriological culture.

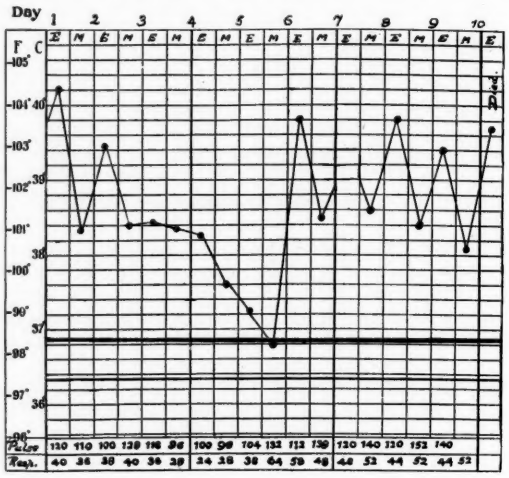

Chart I.

The patient's condition thereafter became steadily worse; he was totally unconscious, and passed his urine and small, yellow, normal motions in the bed. At frequent intervals he stiffened himself out; the fingers were partly flexed, and legs and arms shaking at first slowly, the rhythm gradually increasing, resembling somewhat a tetanic spasm. The convulsions increased steadily but slowly in frequency and severity, the respiration became more frequent and shallow, and the patient died on the tenth day after admission.

The autopsy was performed twelve hours after death. The chest organs appeared normal to the naked eye; the heart muscle was perhaps slightly flabby. There was no free fluid in the abdominal cavity, the liver showed cloudy swelling, the spleen was not enlarged, the kidneys appeared normal. The intestine was normal, the mesenteric lymph glands on the whole were enlarged and appeared on cross-section œdematous.

The *dura mater* of the brain firmly adhered to the skull. The veins of the pia-arachnoid were considerably congested. The brain substance was œdematous on cross-section, soft and congested, and the basal ganglia were the seat of numerous small hæmorrhages. On cross-section the grey substance of the spinal cord was slightly prominent, and of a pinkish grey colour, showing small hæmorrhages here and there, perhaps more numerous in the anterior horns.

Brain and spinal cord were fixed *in toto* in 10% formalin, and pieces of the different regions prepared for microscopical examination. The paraffin sections were stained with hæmatoxylin-eosin and Van Gieson's stain, by Weigert's myelin method, and with saffranin-methylene-blue-orange tannin, after having been treated with an alcoholic solution of iodine as mordant, a method utilized previously by me for staining protozoa in wet films.[8] The latter stain was

useful for the demonstration of the granules of Nissl in the ganglion cells.

Microscopically the most remarkable feature of the sections of the brain and spinal cord was the intense and general congestion of the blood vessels of the *pia mater*, and of the central nervous substance, especially of the grey matter. The perivascular lymph spaces were dilated, being here and there infiltrated with a few cells, mainly lymphocytes and a few plasma cells. Throughout the grey matter of the brain, in the cortex as well as in the large basal ganglia, were small foci of infiltration, consisting of lymphocytes and leucocytes, often but not invariably situated in the neighbourhood of ganglion cells. Similar small isolated groups of cells were noted in the white matter, but occurred less frequently, the brain tissue appearing rarefied around these foci. Many of the nerve cells were in various stages of degeneration; their outlines were irregular, their cytoplasm stained diffusely, the nucleus possessed densely staining chromatin and an indistinct nucleolus. Here and there nerve cells were surrounded by round cells, which sometimes had invaded the cells, and caused their disappearance, a process known as neuronophagia. Sometimes the neuroglia appeared slightly proliferated in the neighbourhood of these islets of cells. A number of the blood vessels showed striking changes; their walls were filled with a number of small, roundish granules of various sizes, staining dark blue with hæmatoxylin, resembling the hyaline granular degeneration of the vessel wall as found in other organs.

It was noteworthy that the lesions were irregularly distributed throughout the brain substance; hardly any foci were observed in one section, whereas numerous ones occurred in other sections of adjoining parts. Sections of the cerebellum did not reveal any lesions. The *medulla oblongata* and the spinal cord presented changes analogous to those of the brain. The blood vessels of the *pia mater* showed only a small degree of perivascular infiltration, which continued along the vessels into the spinal cord substance. The central canal appeared dilated, and the surrounding neuroglia was distinctly hypertrophic. A focal infiltration similar to that of the brain, was found irregularly distributed throughout the spinal cord, perhaps more marked in the lumbar and cervical enlargement. The whole of the grey matter showed a diffuse cellular infiltration, especially marked in the regions of the anterior horns and of the central commissure. There were numerous small islets of leucocytes and lymphocytes surrounding the nerve cells, especially the anterior polar cells; many of the cells were in various stages of degeneration, staining densely and irregularly, and not possessing Nissl's granules. In many instances only remains of the cytoplasm of the nerve cells were visible in amongst the neurophages; in other sections a clump of infiltrating cells indicated the position from which the nerve cell had disappeared. One can thus easily trace all stages of neuronophagia from the earliest stages, where the leucocytes and lymphocytes—here called neurophages—begin to surround the nerve cells, to the latest stage, where the nerve cell had completely disappeared.

The histological examination of several of the spinal ganglia showed somewhat similar lesions. A well marked, diffuse infiltration was noticed here and there, and a distinct degeneration of a few of the nerve cells.

Case 2.—A boy, nineteen years of age, a painter by trade, was admitted on April 1, 1917. The history revealed that he had not been feeling well for nearly a week, and had had a severe fit on the day prior to entering the hospital, succeeded by unconsciousness. The patient was totally unconscious on admission; his arms and legs were trembling; his head was turned to one side and his neck stiff. His facial expression denoted great pain on the attempt to turn his head. His eyes were usually fixed, showing now and again slight nystagmus; the breathing was shallow, and slightly increased in frequency. Whenever touched, the patient became quite stiff, his hands were slightly bent in the wrist joint, the thumb straight and the fingers slightly flexed. His temperature was elevated (*see* Chart II.). The patient never

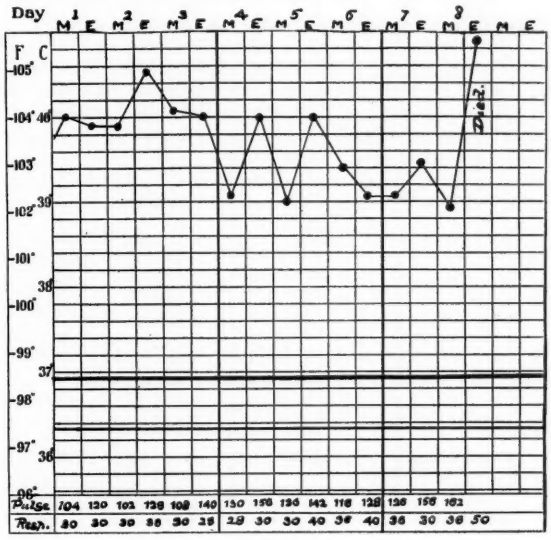

Chart II.

regained consciousness; he sank into a deeper and deeper stupor, emaciating visibly from day to day, and finally died on the eighth day. Kernig's and Babinski's sign were absent. Lumbar puncture was performed on the second and sixth day; the spinal fluid was clear, apparently not under increased pressure, dripping out slowly drop by drop from the needle. The sediment showed a marked increase in formed elements; the sediment consisted of lymphocytes, leucocytes and a few red blood corpuscles. No micro-organisms could be detected on microscopic examination, and the cultivation on the usual culture media, and, besides, on trypsin agar and on human blood serum, gave entirely negative results.

The autopsy was performed six hours after death. The pericardium contained about 5 c.cm. of clear, straw-coloured fluid. The heart was flabby, and its muscle friable. In the left pleural cavity, between the base of the lung and diaphragm, a small amount of thick, whitish fluid was found. Otherwise, the lungs and pleura were normal. The liver showed cloudy swelling, the gall-bladder was filled with dark, greenish bile. The spleen was not enlarged; the kidneys and intestine showed no changes.

The *dura mater* was firmly adherent to the skull. The pia and arachnoid were hyperæmic, the pial veins distended and filled with clotted blood; the convex surface of the brain was covered with a very thin layer of greyish exudate. The congestion was more pronounced over the occipital part of the brain, where

the veins could be easily traced to their finest capillary branches. The meninges of the spinal cord showed similar changes. On cross-section the brain substance was soft and œdematous, and its blood vessels distended. Throughout the grey matter there were numerous hæmorrhages. Larger hæmorrhages could be detected in the medulla, especially marked below the ependym of the ventricle. The ventricle system of the brain and the central canal of the spinal cord were distended and filled with clear fluid. The spinal cord on the whole did not appear much altered to the naked eye; its substance was œdematous and hyperæmic, and there were a few hæmorrhages in the grey matter of the commissure of the lumbar swelling.

Sections were prepared of the various parts of the brain and spinal cord and examined microscopically.

The microscopical examination of the meninges of the brain showed a very marked cellular infiltration, consisting of leucocytes and lymphocytes, a pronounced distension of the blood vessels and small hæmorrhages here and there. This cellular infiltration continued along the vessels into the cortex of the brain. Sections through the large basal ganglia of the brain showed a slight but diffuse infiltration of the grey substance with round cells and a dilatation of the blood vessels. The perivascular lymph spaces were dilated and filled with coagulated lymph containing a few red blood corpuscles. There were numerous small hæmorrhages destroying the brain tissue, the blood corpuscles being in various stages of disintegration. The wall of the blood vessels showed here and there striking changes, whereby the intima and media were not well defined and the vessel wall was filled with irregular small granules of varying sizes, staining dark blue with hæmatoxylin. The majority of the ganglion cells appeared normal.

The meninges of the spinal cord showed a change similar to that of the brain, a marked cellular infiltration, consisting mostly of leucocytes, which continued along the vessels into the surface layer of the spinal cord; the vessels were distended, and small hæmorrhages were not rare. The grey substance showed a slight but well marked cell infiltration, which was irregularly distributed, more pronounced in sections through the lumbar swelling, affecting mostly the tissue surrounding the central canal.

Although sixteen pieces of the spinal cord at different levels were microscopically examined, only one section, and that through the upper part of the cervical enlargement, showed neuronophagia. One of the ganglion cells of the anterior horn was surrounded by a number of mononuclear cells, forming thus a typical focus. The nerve cells on the whole appeared normal. Sections through the spinal ganglia showed normal conditions.

In the liver tissue there was microscopically a small amount of hæmorrhagic infiltration between the acini. The kidney, spleen and lymph glands did not show any noteworthy changes.

Case 3.—A boy, one year and eight months old, was admitted to the hospital on April 26, 1917. His mother stated that the child had been in perfect health until mid-day, when he suddenly had a fit and became unconscious. Six hours afterwards he was taken to the hospital in an unconscious condition, with a subnormal temperature and a pulse-rate of 140. The muscles of his legs, arms and face were twitching continuously; his head was turned to the side. The neck was not stiff; both pupils were slightly dilated and equal, and he showed neither squint nor nystagmus. The following day his temperature rose to 40.5° C. (*compare* Chart III.) and his pulse-rate was 170; cold packing for one hour reduced the temperature to 38.9° C.. His bowels acted at first frequently; the stools were loose, greenish-yellow and slimy. In the course of the next few days there was hardly any change in his general condition. The patient was unconscious, twitching at intervals. On the eighth day the respiration-rate, which had been nearly normal up to then, increased in frequency; the breathing became more and more distressed, and the child died on the tenth day after admission of respiratory failure.

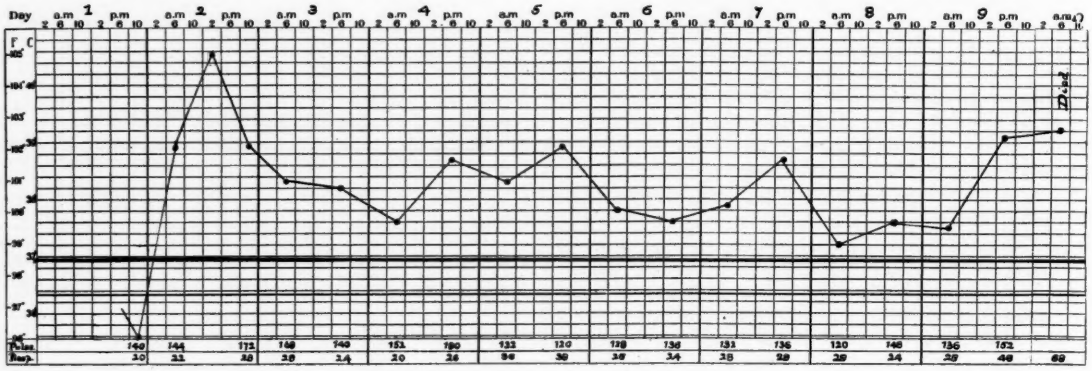

Chart III.

Lumbar puncture was performed on two occasions. The cerebro-spinal fluid was clear, and apparently not under increased pressure. The sediment contained a small number of leucocytes and lymphocytes and neither microscopical nor cultural examination revealed the presence of micro-organisms.

A post-mortem was performed two hours after death. The chest organs were normal. The liver was slightly enlarged, and in an advanced stage of fatty infiltration. All the other abdominal organs were macroscopically of normal appearance.

The *dura mater* of the brain was firmly adherent to the skull. The meninges were hyperæmic, the veins greatly distended and filled with dark fluid blood. The brain substance on cross-section was œdematous, soft and hyperæmic, but hæmorrhages could be discovered neither in the grey nor in the white matter. The ventricular system was slightly distended. The

meninges of the spinal cord were of similar appearance to those of the brain. The spinal cord substance was œdematous and congested.

The microscopical examination of sections through the cortex of the brain showed no cellular infiltration of the meninges. The brain substance revealed slight cellular infiltration, which was most marked in sections of the large basal ganglia. The vessels were congested, the perivascular spaces distended. In sections of the *thalamus opticus* a few of the ganglion cells were surrounded by a number of mononuclear cells. The cerebellum appeared microscopically normal.

Sections through the pons, medulla and spinal cord showed a few foci of cellular infiltration, most marked in the neighbourhood of the dilated central canal and in the grey substance of the anterior horns. A few small hæmorrhages were seen in the grey matter of the spinal cord, especially in that of the lumbar swelling.

The microscopical examination of the liver revealed a diffuse, fatty infiltration of the liver cells, which often completely obscured its structure, and numerous small hæmorrhages were observed.

Sections of the kidney, spleen, intestine, heart muscle and spinal ganglia did not show any pathological lesions.

Case 4.—A girl, thirteen years of age, was admitted to the hospital on May 21, 1917, in the afternoon. Her employer stated that the girl had been "feeling slightly off colour" on the previous day, but still had a good appetite. During the morning of the day of admission she felt decidedly ill, and complained of headache; about mid-day she suddenly had a fit, with workings of the leg, arm and face muscles, and she became unconscious. She arrived at the hospital about 5 p.m. in an unconscious state. Her temperature was 40.5° C., her pulse-rate 132; the pulse was regular and of good quality. The respirations were deep. The patellar reflexes were exaggerated, but ankle clonus was absent. Babinski's sign was present in both feet, but Kernig's sign was absent.

Shortly after admission the patient passed a loose, dark brownish, offensive stool. The urine did not contain albumin or sugar.

A lumbar puncture was performed the following morning. The spinal fluid was clear, not under increased pressure, and the sediment contained a small number of leucocytes and lymphocytes. Cultures of the sediment on ordinary media, on trypsin agar and human blood serum remained sterile. The patient did not regain consciousness; the temperature rose to 41° C., and she died the following day at noon.

The autopsy was performed one hour after death. The thoracic organs were normal, with the exception of two small foci of infiltration at the back of the lower right lobe of the lung. The liver was slightly enlarged, showing on cross-section traces of fatty infiltration.

The *dura mater* adhered firmly to the skull. The meninges of the brain and spinal cord were hyperæmic. The brain substance appeared on cross-section soft and œdematous and congested. In the grey substance, especially in that of the *thalamus opticus* and *nucleus caudatus*, numerous small hæmorrhages were seen. The grey matter of the spinal cord appeared prominent on cross-section, of pinkish grey colour, with numerous small, punctiform hæmorrhages.

The brain and spinal cord were fixed in formalin, and sections prepared for microscopical examination.

The meninges of the brain showed microscopically a slight but diffuse infiltration with round cells, which was more marked around the blood vessels, and continued along the vessels into the surface layer of the brain. The cortex was diffusely infiltrated with leucocytes and small round cells, which formed here and there small foci, the neighbouring brain substance appearing rarefied. Small, irregular hæmorrhages were scattered throughout the cortex and white substance. The large basal ganglia showed lesions of a similar nature, but more pronounced. There was a marked small cell infiltration in the adventitial sheath of the larger- and medium-sized blood vessels; the cells were composed of lymphocytes, polymorphonuclear leucocytes and plasma cells, interspersed with larger cells possessing a large vacuolated nucleus, poor in chromatin. Below the ependym of the ventricles, as well as generally distributed throughout the grey matter, one could notice roundish or irregular foci, where the brain substance appeared rarefied, and was represented by an open meshwork of glia, with small collections of leucocytes and lymphocytes in the meshes. Smaller and larger, irregular hæmorrhages were commonly observed, and in several sections a few of the larger vessels were surrounded by a mantle of free red blood corpuscles.

A number of the ganglion cells were surrounded by cells—neurophages—and many of the nerve cells appeared in various stages of degeneration.

Sections through the pons and medulla showed analogous changes. A well marked small cell infiltration was observed around the medium-sized and larger blood vessels, and the same roundish areas of softened tissue, invaded by leucocytes and lymphocytes, were of frequent occurrence in the grey matter. The cerebellum seemed to have escaped entirely, and, excepting for congestion, the sections showed normal conditions.

In sections through the spinal cord similar lesions to those of the brain were seen, irregularly distributed, but to a greater or lesser extent present in every section. The inner layer of the pia-arachnoid was infiltrated, which infiltration followed along the vessels into the surface layers of the spinal cord. The most striking feature was numerous irregular hæmorrhages in the grey substance, mostly situated in the central commissure and in the posterior horns. Similar hæmorrhages were also present in the adjoining white matter, and a number of the ganglion cells of the anterior horn were surrounded by red blood corpuscles.

A diffuse round cell infiltration was well marked throughout the grey matter, the infiltrating cells often forming small foci. Many of the ganglion cells showed profound changes, their nuclei often staining diffusely, and their nucleoli had disappeared; neuronophagia was only occasionally seen.

A number of spinal ganglia were examined microscopically; some of the nerve cells stained diffusely, their nuclei having disappeared, otherwise no marked changes were observed.

Sections of the portions of the lung which appeared infiltrated, showed the typical picture of capillary pneumonia.

Sections of the heart, spleen, kidney, mesenteric and inguinal lymph glands appeared normal. Sections through the liver showed cloudy swelling, fatty infiltration and small hæmorrhages.

(To be Continued.)

SOLDIERS' EYESIGHT.

By F. Antill Pockley, M.D.,

Lecturer on Opthalmology in the University of Sydney, Honorary Opthalmic Surgeon to the Royal Prince Alfred, and the Royal North Shore Hospitals.

The lamentable shortage of reinforcements for our men on active service furnishes the excuse for this short article.

I am sure that there are in the Commonwealth many thousands of eligible and willing men who have been rejected because of deficient visual acuity, who would have made excellent fighting men. Broadly speaking, it might be said that every man who is able to make a living at any outdoor or manual occupation is suitable for some branch of the service, no matter what his vision is, so long as he is not suffering from progressive disease. I have known, amongst others, a telephone line repairer, blacksmith's striker, boundary riders, farmers, labourers, etc., rejected for the sole reason that their vision was not up to the standard required. Surely men, strong and active, who can work continuously on jobs such as these, are suitable for active service. Not every one is required to be a sharp-shooter, in fact, under modern conditions of warfare, artillery men generally, and infantry frequently, shoot at invisible objects, and as for the Army Medical Ambulance, Army Service Transport, Despatch Riders, Sappers, Miners and all auxiliary services, a very low standard of vision is all that is necessary.

Let me give two examples, both patients of mine. One, a solicitor's clerk, sound, strong and active, but with 7 diopters of hypermetropia, and uncorrected vision only $^6/_{60}$, was rejected six separate times, but by persistence and influence at last got away in the Army Medical Corps, as a stretcher bearer. On arrival in England, he immediately received a transfer to the Artillery, in which, in 18 months he rose from private to first lieutenant, is now recommended for a captaincy, and has been twice mentioned in despatches. Another, a farmer, a former student of Hawkesbury College, an albino, vision only $^6/_{60}$, with glasses, in either eye, after correction of a high degree of hypermetropic astigmatism, and with nystagmus, after having been rejected times without number, eventually got away in the Army Service Corps, and now has a sergeant's stripes in the Veterinary Corps in France, where he is doing excellent work. In civil life he was a fair rifle shot. I have chosen these two extreme cases to show how absurd it is to reject men who have much better vision than these, simply because they do not attain to the prescribed standard of vision with Snellen's types.

To-day I saw a young farmer, a former patient, who has been rejected three times, the last time only this morning (he showed me his reject certificate), yet he has with correction $^6/_4$ in the right eye, and $^6/_{18}$ in the left.

When only a small standing army is required and there is a large supply to draw from, it is right and proper to insist on a very high standard of physical fitness, for such is attainable, but when a whole nation is at war, it is not only necessary to lower the standard, but that can be done without impairing the efficiency of the army by a system of classification. The standard required in the early days of the war has already been considerably lowered, and men, whose vision is improved by glasses, are now allowed to wear them. This, of course, has obtained in the continental armies all along. In Germany, if they were to exclude myopes, or disallow glasses, there would be an enormous number of inefficients. As regards eyesight, men with vision in each eye $^6/_6$ or better, would be fitted as aviators or sharpshooters. For infantry generally a far lower standard would suffice. It is a well known fact that many crack rifle shots have sub-normal vision. I know of a kangaroo hunter, whose livelihood depends on accurate shooting, with vision $^6/_{24}$ in the better eye. For artillery (garrison, field or horse), sappers, miners, stretcher bearers, and Army Service transport driver a far lower standard would suffice, and for men who are not to receive a military training, but to be employed only in auxiliary services, a committee of the Royal Ophthalmological Society has given the opinion that vision equal to $^6/_{60}$ with one eye, either right or left, with or without glasses, is sufficient. Men who are blind in one eye, should not be rejected if the sight of the other eye be good. I had a one eyed patient, the champion pigeon shot of his district, a strong, healthy, temperate man, a horse-breaker, who was refused because he had lost the left eye, but vision in the right was $^6/_4$.

I have only just touched on the subject; to go fully into it would require too long a paper. Other points could be elaborated, such as quickness of response to visual stimuli (a thing apart from visual acuteness), night vision, and so forth. It is not in my province to go into the question of other forms of unfitness, but I might say that I know of many rejections of men who all day and every day were doing heavy manual work, such as timber getting, fencing, carrying heavy loads for long distances over rough country, rejected for flat feet, slight degrees of variocele, or varicose veins, who would have made excellent fighting material, and yet, while such men are rejected, one sees, every day, in khaki, weeds, who, it is obvious, would crack up under any prolonged strain, but who were able to pass the regulation tests.

The practical point, as I observed at first, seems to me to be that any man who is able to earn a living at hard manual work and many following sedentary occupations, but who are good athletes, are fit for some form of military duty, and should not be rejected because of this or that defect. Judging by many rejections one sees, it would appear as if some of the younger examiners wished to show their smartness in detecting slight defects. If experienced examiners with common sense (and I believe such are to be found) were appointed and they were given a free hand and not bound by cast iron regulations, we should have fewer rejects, and an efficient army. General fitness and stamina, even if accompanied by some defect, should count

more than the ability to pass the different tests, which is quite possible for many weaklings.

We read of over ten thousand men, who have never been near the front, being returned because of general unfitness (and yet these men must have passed the so-called tests). This would not have been the case had the examinations been made by men of experience and common sense, untrammelled by red tape and cast iron standards to work by. The Commonwealth would have been saved the expense of equipping, training, feeding, transporting, and re-transporting these thousands, and the country would not have lost the value of these men's services in their former occupations, and, more important still, a very large number of efficient men would not have been rejected.

Reports of Cases.

A PUERPERAL TOXÆMIA.[1]

By **W Sloss, M.B., Ch.B. (Melb.), F.R.C.S. Ed.**
Ballaarat, Victoria.

The case recorded below illustrates a type of toxæmia arising during the puerperium in a previously healthy woman. The condition is fortunately infrequent, but inasmuch as no post mortem examination could be made, its exact pathology must remain a matter for speculation. The toxins on which these symptom complexes depend, may be of endogenous or exogenous origin. While but little is known of the nature of the former, it can definitely be stated that pathological changes in the kidney or elsewhere may give rise to an acidosis, with a consequent chain of disastrous symptoms. In other cases an obscure chemical effect is produced in the renal tissue, and the effects make themselves felt on both the maternal and the fœtal organism. Again it appears as if the primary pathological change may arise in the ovum (placenta) and the toxic action of the disintegration products is noted chiefly on the liver, kidneys and central nervous system. In the second group the exogenous poison may be generated in some septic or suppurating process in the maternal organism during the pregnancy. A pyonephrosis and an infective lesion of the intestines may be cited as examples of the primary sources of poison. In other cases a septic focus may be established during the parturition and bacterial products may give rise to a chain of symptoms indistinguishable from that of acute yellow atrophy of the liver, of renal insufficiency or of eclampsia.

Mrs. X. was a short, well-nourished woman, 25 years of age. Her father was alive and healthy; her mother had died at the age of 34 years of chronic Bright's disease. She had two sisters and one brother, all of whom were in good health.

The patient had never before been under the care of a medical practitioner. She had been married on January 6, 1917, immediately after the termination of a menstrual period. She became pregnant at once and expected her baby on October 12. The labour, however, did not terminate until November 3, 1917. During the month of September her urine had been examined. It was free from albumin and sugar. The specific gravity was 1032. The daily quantity excreted was usually somewhat small. During the whole course of the pregnancy she had had a voracious appetite. She was more than usually fond of lemons. She had slept badly and had a terrible presentment that she would not get over her confinement.

On October 31, slight pains set in. On the following day I examined her and found the *os* dilated sufficiently to admit the tip of my finger. It was placed high up. The presentation was right occipito-posterior. On November 2 the pains were somewhat stronger, but were still irregular. The *os* was slightly more dilated, but the head had not advanced. As she was very tired, not having slept during the night, I gave her 0.015 gramme of morphine. The bowels had been freely opened each day by castor oil. On November 3 the patient was becoming worn out. She was extremely nervous about her condition. I therefore asked Dr. Salter to give an anæsthetic and delivered her of a male child, weighing 4¾ kilograms. The delivery was somewhat delayed, as I had to dilate the cervix before applying the forceps. The child was born alive. The perineum was stitched while the patient was still under the anaesthetic. There was no laceration of the cervix. The third stage of labour did not present any difficulty. Light chloroform anæsthesia was maintained throughout.

I saw the patient again during the afternoon of November 3. She said that she felt "splendid." On the following morning she said that she felt well, but very tired. She had had a good night and had on two occasions passed "large quantities of urine" without the aid of a catheter.

In the evening of November 4 I was informed that her breasts were very tender and discoloured. During the night I received an urgent call, and on arrival found she was semi-conscious, crying out for whisky, and complaining very much of thirst and pain in the epigastric region. She had not been in the habit of taking any alcoholic beverages at all.

The patient looked ghastly by gas-light. The breasts were greatly engorged with blood. They were practically black, very tense, and very tender. In about 20 minutes she regained consciousness completely. I then detected a marked tenderness over the epigastric and hepatic regions. No diminution of the liver dulness was discernible. She complained of feeling sick but not more so than she had felt since the labour began. She vomited once. The temperature was 37.3° C., and the pulse-rate under 100. The lochia were natural. She complained of intense thirst. There had been no rigors.

On November 5 she was jaundiced. Her skin had a greenish-yellow hue, and this became more intense during the day. The temperature was under 37.8° C., and the pulse-rate under 100.

Drs. Morrison and Salter saw her with me. Neither of them had seen a similar condition before. They were especially struck by the breasts which were absolutely black. In the afternoon she became restless, and at night time she became comatose. A catheter was then passed and about 100 cubic centimetres of urine were drawn off. The urine contained a large quantity of bile, but no acetone. There was some leucin, but no tyrosin crystals were observed. There was no sugar, and but a faint trace of albumin. No hæmorrhages were seen in any part of the body, not even at the site of the hypodermic injections. She died on the following morning, November 6, without having regained consciousness. I signed the death certificate, with the cause given as "acute yellow atrophy" occurring in the puerperium.

[1] Read at a meeting of the Ballaarat Division of the Victorian Branch of the British Medical Association on November 27, 1917.

Reviews.

THE MENTAL DISORDERS OF WAR.

Dr. Lépine was given charge of one of the numerous *Centres de Psychiatrie* in France, and during the first two years of the war examined no less than 5,000 cases of mental disorder among the French troops, accordingly this little book is based on solid experience.[1] It is one of a series of *précis* issued by Masson et Cie, and is offered not as a treatise on mental disorders but as a guide to army medical officers. This purpose, in our opinion, it most successfully meets. The first half is devoted to a description of the various forms of aberration and the accounts of the psychoses following concussion and of delusional states may be singled out as being specially instructive. As a causative factor, in addition to war conditions, surprising importance

[1] Troubles Mentaux de Guerre, by Jean Lépine. Masson et Cie, Paris; 1917. Demy 8vo., pp. 203. Price, 4fr.

is attached to the abuse of alcohol. In the second half, the malingerer, the rebel against discipline and other delinquents are weighed up, and the book closes with remarks on general treatment and management which prove that the French spare no effort to alleviate these disabilities.

HYGIENE.

In the preface to "A Treatise on Hygiene and Public Health," by Ghosh and Das,[2] the authors state that such a text-book, having special reference to tropical climates, has been a distinct want. That this has been so, is evidenced by the appearance of the present third edition.

This work constitutes an excellent text-book for a student undertaking a course of public health in India itself, but hardly meets the want of one living in temperate climates, who is desirous of obtaining the most complete knowledge of tropical problems. For the latter it might be a wise course for the authors to submit a European edition of their work, curtailing certain chapters on general health principles (which numerous standard English books now provide) and amplifying those chapters dealing with subjects peculiarly tropical, of which the authors give evidence of such expert knowledge, *e.g.*, climate, native problems and customs, insects, infections, diseases of warm climates, sewerage systems, water supplies, etc.

In the edition under review the chapters on food, the disposal of sewage, and insects are clearly and well written, but one could wish that these subjects had been more extensively dealt with as indicated above.

However, as a whole this work justifies the authors' contention in its use as a text-book for students, and can be highly recommended for that purpose.

Charles Horsfall Armitage, M.B., Ch.M., 1915 (Univ. Sydney), of 40 Avenue Road, Mosman, has been nominated for election as a member of the New South Wales Branch of the British Medical Association.

Public Health.

NEW SOUTH WALES.

The following notifications have been received by the Department of Public Health, New South Wales, during the week ending March 2, 1918:—

	Metropolitan Combined District.		Hunter River Combined District.		Rest of State.		Total.	
	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.
Enteric Fever	6	1	3	0	17	2	26	3
Scarlatina	12	0	1	0	10	0	23	0
Diphtheria	60	1	3	0	35	1	98	2
*Pul. Tuberculosis	26	9	1	1	1	1	28	11
C'bro-Spl. Menin.	2	0	0	0	4	11	6	11

* Notifiable only in the Metropolitan and Hunter River Districts, and, since October 2, 1916, in the Blue Mountain Shire and Katoomba Municipality.

QUEENSLAND.

The following notifications have been received by the Department of Public Health, Queensland, during the week ending March 2, 1918:—

Disease.	No. of Cases.
Enteric Fever	33
Scarlatina	4
Diphtheria	51
Pulmonary Tuberculosis	16
Cerebro-spinal Meningitis	1
Malaria	1
Erysipelas	3
Ankylostomiasis	1
Bilharziosis	1

[2] A Treatise on Hygiene and Public Health, with Special Reference to the Tropics, by Birendra Nath Gosh, F.R.C.P.S. (Glasg.), and Jahar Lal Das, L.M.S. (Cal. Univ.), with an Introduction by Colonel Kenneth Macleod, M.D., LL.D., F.R.C.S.; Third Edition; 1917. Calcutta: Hilton & Company. Crown 8vo., pp. 397, with illustrations. Price, 6s. net.

VICTORIA.

The following notifications have been received by the Department of Public Health, Victoria, during the week ending March 3, 1918:—

	Metropolitan.		Rest of State.		Total.	
	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.
Enteric Fever	12	1	13	0	25	1
Scarlatina	18	0	20	0	38	0
Diphtheria	62	0	40	1	102	1
Pulmonary Tuberculosis	16	3	13	1	29	4
C'bro-spinal Meningitis	0	—	1	—	1	—
Poliomyelitis	15	—	7	—	22	—

SOUTH AUSTRALIA.

The following notifications have been received by the Central Board of Health, Adelaide, during the week ending February 23, 1918:—

	Adelaide.		Rest of State.		Totals.	
	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.
Enteric Fever	0	0	5	0	5	0
Scarlatina	0	0	5	0	5	0
Diphtheria	6	1	19	1	25	2
Pulmonary Tuberculosis	3	5	20	3	23	8
Morbilli	0	0	4	0	4	0
Pertussis	0	0	11	0	11	0

WESTERN AUSTRALIA.

The following notifications have been received by the Department of Public Health, Western Australia, during the week ending February 23, 1918:—

	Metropolitan. Cases.	Rest of State. Cases.	Total. Cases.
Enteric Fever	3	2	5
Scarlatina	3	2	5
Diphtheria	8	4	12
Pulmonary Tuberculosis	9	2	11
Cerebro-spinal Meningitis	2	0	2
Erysipelas	1	0	1
Hæmaturia	0	1	1

TASMANIA.

The following notifications have been received by the Department of Public Health, Tasmania, during the four weeks ending March 2, 1918:—

Disease.	Hobart. Cases.	Launceston. Cases.	Country. Cases.	Whole State. Cases.
Enteric Fever	9	1	18	28
Scarlatina	1	1	3	5
Diphtheria	7	5	26	38
Pulmonary Tuberculosis	3	5	7	15
Poliomyelitis	0	0	4	4

NEW ZEALAND.

The following notifications have been received by the Chief Health Officer, Department of Public Health, Hospitals and Charitable Aid, New Zealand, for the four weeks ending February 4, 1918:—

Disease.	No. of Cases.
Scarlatina	110
Diphtheria	309
Enteric Fever	59
Pulmonary Tuberculosis	102
Poliomyelitis	1
Puerperal Fever	5
Erysipelas	2
Tetanus	1
Trachoma	1
Septicæmia	1

"Wellcome" Photographic Exposure Record and Diary is again in our hands. The 1918 edition has several new features. It should prove an excellent guide to the beginner and an equally reliable reminder to the practised photographer. It contains a practical article on taking good photographs and a second article dealing in some detail with the difficult subject of correct exposure. Added to this is an exposure calculator, and an ample description of how to use it. The diary part of the booklet is handy. Two fine war photographs add considerably to the attraction of the publication.

The Medical Journal of Australia.

SATURDAY, MARCH 16, 1918.

Post-War Cripples.

In the year 1914 Australia entered the war with a fine determination to give a good account of herself. The physical bearing of the members of the early contingents, the ready response of volunteers, the splendid determination of the leaders to exhaust every expedient and if necessary to sacrifice "the last man and the last shilling" gave hope that each of the numerous problems involved in the titanic undertaking would be studied carefully, and a satisfactory solution found without undue loss of time In the early days, the excuse for the continued lightheartedness of the community at home was that Australia was so far from the seat of real warfare. The stranger in Sydney or Melbourne would scarcely have believed that Australia, as part of the great British Empire, was engaged in a life and death struggle. The natural and artificial advantages of this sun-lit land prevented the people from abandoning their usual mode of life. The pursuit of pleasure remained the most important item of the day. There were no bombs dropped on our cities; the sound of guns could not reach our ears; we did not believe in the possibility of invasion. Time passed prosperously in the Commonwealth and the people were twice asked whether they did not regard it to be a national duty that the hale and hearty youth of this country, hitherto enjoying the protection, the munificent financial assistance and the tolerant consideration of the mother country, should go out to join those who had already responded to the call. The people saw the beauties of this wonderful country, free and happy, and shuddered at the thought of leaving it to face blood, fire and death. The leaders sought to cover their shortcomings by sheltering behind the declared will of the people. In every branch of the service things were allowed to shape themselves. Organization was spoken of, but scarcely evolved. The want of foresight led to failure in Egypt and the Dardanelles; the lack of co-ordination was followed by the necessity of offering high pensions to the incapacitated. After more than three and a half years of war, the Director-General of Medical Services has been allowed to proceed to Europe to study the arrangements for dealing with the disabled, the maimed and the crippled. After three and a half years! Everyone knew in August, 1914, that each of the belligerent countries would have sooner or later to face the problem of endeavouring to restore a large number of men to useful life, and to limit the number of derelicts to a minimum. Apparently Australia has elected to do this later. In season and out of season during the greater part of the three and a half years, we have urged the institution of a properly equipped orthopædic service and of a properly adjusted neurological system. The object of these two organizations would have been to place our soldiers as soon as possible after the reception of their wounds or after other deteriorating influences had produced their baneful results, in the most favourable position for complete physical and mental restoration. The necessity for early and well-planned orthopædic and neurological work has been emphasized by many highly trained medical officers on their return to the Commonwealth. But up to the present there has been no serious attempt to create a proper service, which would offer our soldiers the best chances for a profitable and useful life after the war. It is now becoming a common experience to see returned men whose mental condition demanded expert control at a stage when the horrors of war had recently unfitted them for the serious business of civil life. In some cases these men find it difficult and almost impossible to settle down to the dull monotony of an ordinary occupation. In other cases there may be a loss or diminution of stability, a defect of memory, or even a partial or complete disappearance of ability. Some of these men suffer from functional paralyses, while in others there is a "reversion to disorders of development," as Sir George H. Savage has recently described it. Latent diseases may reappear. In the most formidable cases the affective side of these men's mental character is disturbed and

secondary mental changes may develope as a result of alcoholism. Honest men are known to have become thieves, and previously decent citizens have abandoned themselves to a life of sexual indulgence. The variety of the underlying changes is countless. All, however, have a common trait; there is loss of control and a need for expert assistance. Sir George Savage holds the opinion that many of these people, whom he has denominated "mental war cripples," may be healed by cautious treatment in special or general colonies. The treatment must be prolonged, especially if it is begun late. Segregation may be advisable for the epileptics, but the sufferers from the majority of the other nerve disorders may derive benefit by intercourse with others with similar war disabilities. It is not enough to provide accommodation in connexion with the hospitals for the insane. These men need individual and very varied handling. They form a large part of a very large problem.

THE MEDICAL PROFESSION AND THE STATE.

Ever since medical sociology has become a subject arresting the attention of the medical profession and of the community, abstract proposals for the institution of a national medical service has found votaries. In the ranks of the profession there have been extremists who have advocated the conversion of the profession into a gigantic medical service of whole-time medical officers, salaried by the State, and having the duty of providing the community with medical attendance, free of all cost to the individuals. On the other hand there have been extremists who have maintained that such a medical service is impossible of realization and entirely contrary to the interests of the profession and of the public. The votaries of the former proposition have failed to realize that the medical profession embraces men who would definitely refuse to become salaried medical officers under any conditions and, further that others, whose services carry a handsome remuneration, would require a very large retaining fee, before they could be persuaded to join any scheme of this kind. In the third place, even if a national medical service could be established without the inclusion of surgeons and physicians of eminence, who can command considerable incomes, the cost to the State of any scheme of this kind, under the conditions obtaining in Australia, would be not less than two and a half or three millions a year, an amount that is unlikely to be forthcoming. We cannot assent to the proposition that there is anything impossible about a national medical service. Impelled by motives of patriotism and love for the greatest Empire of all time, over one-third of the members of the medical profession in Australia have joined a national medical service. The Australian Army Medical Corps does for our soldiers exactly what some people would have the profession do for the whole community. There is, however, one essential difference between the Army Medical Service and a civil medical service, which indicates the direction in which failure would arise. In the former the medical officers submit to military discipline. In the latter there would be no incentive to any such submission, and we make bold to assert that not one man in one hundred would be prepared to sacrifice his liberty of action and his right to refuse to attend a patient, if circumstances demonstrated to him that his treatment would be of no avail to the patient and of no credit to himself. There are defects in the Army Medical Service, due to imperfect organization. There would be nothing but defects in the civil medical service, because there could be no acquiescence to any organization.

The proposals have not been made merely because of a desire to overthrow an old institution. It is recognized that the public have a right to demand a better application of medical knowledge than they receive. Medical students have to undergo a long and arduous training in many of the branches of medical science and are not allowed to graduate until they can prove to their examiners that they have a good elementary acquaintance with the science on which their practice is to be based. Facilities exist at the present time, in the form of post graduate classes, and readily accessible books and journals, for the continued education of medical practitioners, and there are but few who fail to take some advantage of these provisions. As years pass, the standard of practice is becoming raised, and we venture to hold a sanguine opinion that the defici-

encies of the practitioner in the application of curative medicine are gradually but surely being lessened. The community is receiving better and more valuable service at the hands of the general practitioner and of the specialist than they received a decade ago. For this reason it would be unwise and even dangerous to disturb the relations between the practitioner and the public.

While the reasons which have impelled sociologists to demand the introduction of nationalization of the medical profession, are not to be found in the defects inherent in the practice of curative medicine, the same cannot be said in connexion with the application of preventive medicine. The practitioner is inclined to regard this branch of medicine as outside his sphere. He is rarely, if ever, engaged to ward off disease or to stamp it out altogether. That is the business of the public health service, and all measures of prophylaxis have to be undertaken by this service alone and unaided. In Australia the public health services suffer for many reasons. They are largely dependent on the whims of the political heads of the departments. Too often beneficial measures cannot be applied, because the sums required are relatively large, and the politicians are indisposed to grant these amounts for purposes little attractive to the public fancy. Again the activities are too restricted on account of the comparatively small number of officers engaged. Organization in the public health services is not only possible, but is eminently practicable. There is too little good organization in our services. In the next place there is a lack of uniformity both in regard to the legislative basis for the application of hygiene and in regard to the manner in which the problems are attacked. Lastly, the public health services receive but little co-operation and assistance from the practising profession, without which a full measure of success cannot be attained.

The Federal Committee determined at its recent session that the six Branches of the British Medical Association in Australia should be invited to submit schemes for the institution of some form of national medical service. In reviewing the situation, we venture to suggest that the primary object of a desirable scheme must be the extension of the public health services. The extension should be in the direction of the better and wider application of measures for the prevention of disease. The scheme should embrace an arrangement with the members of the medical profession who are engaged in private and lodge practice, whereby they would introduce into their practices, as far as is possible at the present time, a greater amount of prophylactic treatment than has hitherto been customary, and whereby they would be willing to collaborate under well-defined conditions with the public health officers in carrying out general measures of prevention. The Federal Committee has taken the first step in the endeavour to enhance the value of the profession to the public, and it would seem as if, with the exercise of some ingenuity and careful thinking, this end could be achieved.

AMŒBIC DYSENTERY AND IPECACUANHA.

During the last few years ipecacuanha and its constituent, emetine, have been used freely in the treatment of dysentery due to the protozoal parasite, *Entamœba histolytica*. The therapeutic effect has been ascribed to a specific poisonous action of emetine upon the protoplasm of this micro-organism. The amœbæ are supposed to be killed by the drug or rendered incapable of reproduction. Some have thought that a concentration of emetine insufficient to free the intestine from amœbæ, leads to the development of a strain of the parasite refractory to destruction by ipecacuanha. Pharmacologists have made studies upon cephaeline and other substances allied to emetine in the hope of finding a medicament possessed of an equal or greater power in destroying amœbæ but with less toxic action upon the tissues of the human host. It has been the practice to administer this remedy either by the mouth or by hypodermic injection subcutaneously. The fact that the therapeutic action of emetine is manifested as strongly after systemic exhibition as after oral administration, has led some physicians to question its alleged parasiticidal qualities.

A careful experimental study[1] of the action of emetine upon *Entamœba histolytica* has been undertaken by Dr. H. H. Dale, F.R.S., and Dr. C. Dobell, under the auspices of the Medical Research Committee, London. Amœbic dysentery has been transmitted from man to dogs, cats and rats. Attempts to infect monkeys have been usually unsuccessful, though spontaneous amœbic dysentery has been observed several times in monkeys. The majority of investigators agree that kittens are readily infected by the introduction of active amœbæ *per anum*. Kittens can also

[1] *Journ. Pharmacology and Exper. Therapeutics*, Vol. X., p. 399, December, 1917.

be infected by feeding them *per os.* with the cysts of *Entamœba histolytica.* The infection of kittens with *Entamœba histolytica* invariably leads to a fatal dysentery. Drs. Dale and Dobell have transmitted a strain of *Entamœba histolytica,* obtained from a patient suffering from recurrent dysentery, through 40 passages from kitten to kitten. The average period of incubation after infection *per anum* was just over two days, though the disease appeared under 24 hours on 37 occasions out of 106 infections and the incubation period was more than 72 hours on eleven occasions. The average interval between the onset of the disease and death was four days, only 13 of the 106 kittens surviving more than five days. These kittens served for testing the therapeutic action of emetine and its allies. All attempts by these investigators to prevent death failed, and heroic doses of emetine did not appreciably modify the course of the dysentery.

It was asserted in 1912, by Vedder, that amœbæ obtained from free-living cultures were killed by emetine hydro-chloride and by cephaeline in dilutions of one part in a hundred thousand, and that extracts of ipecacuanha, freed from alkaloids, had but little amœbacidal activity. Somewhat later, Rogers stated that emetine hydrochloride in a concentration of 1 in 10,000 killed immediately the amœbæ from the stool of a sufferer from acute dysentery, and that the amœbæ became rounded and exhibited granular degeneration after a few minutes' exposure to a solution containing one part of emetine hydrochloride in 100,000 of mixture. He further remarked that cephaeline had a similar amœbacidal action to emetine, but was more toxic to man. Drs. Dale and Dobell have been unable to confirm these results. They find that active specimens of *Entamœba histolytica* may remain alive and motile after exposure for one hour to the action of 1 in 1,000 emetine. Weaker solutions have only a slightly toxic effect on the amœbæ. The authors have considered various ways in which their results might differ from those of previous investigators. They thought that the strain of amœbæ might be specially resistant to emetine. When the patient from whom the strain was treated with bismuth and emetine iodide, the infection disappeared and the stools remained free from amœbæ for 215 days, when the observation of the stools ceased. They thought that, perhaps, microscopical examination of the amœbæ was not suitable for determining viability. Amœbæ were mixed with emetine and the mixture used after some hours to infect kittens. Infection of the kittens resulted. Emetine did not, therefore, diminish the infectivity. Finally, it appeared possible that the passage of the amœbæ through the kittens might raise the resistance. The experiments *in vitro* were repeated with amœbæ obtained direct from a patient suffering from dysentery who had not been given emetine. Emetine had no greater toxic action on these amœbæ than on those used in the earlier experiments.

A number of alkaloids allied to emetine, and of other substances, were tested by the same methods. Quinine was found to have the same toxicity as emetine. Harmaline, an alkaloid from *Perganum harmala,* was much more toxic than emetine. A 1 in 100,000 solution had almost the same toxicity as 1 in 1,000 emetine. Cusparine, so noxious to *Paramœcium,* was not lethal for *Entamœba histolytica.* Tartar emetic and neosalvarsan were not poisonous to the amœbæ in concentrations of 1 in 1,000 of mixture. Mercury succinimide and copper alanine, in concentrations of 1 in 30,000, were lethal for the amœbæ.

It appears that the theory of the action of emetine in dysentery requires revision. What seems to be certain is that emetine possesses no specific amœbacidal activity. No evidence is as yet available as to the manner in which emetine might influence the tissues of the human body so as to increase their resistance against the invasion of this protozoon.

THE RETIREMENT OF SIR ALFRED KEOGH.

The announcement of the retirement of Surgeon-General Sir Alfred Keogh, G.C.B., from the position of Director-General of Army Medical Services, to which reference was made in our issue of January 26, 1918, has been explained in a communication of the Secretary of the War Office. It appears that the Governors of Imperial College of Science and Technology sanctioned the temporary release of Sir Alfred Keogh from his duties as General Executive Officer at the beginning of the war, in order that he might again undertake the duties of Director-General of Army Medical Services. It will be remembered that he filled this position with distinction from 1905 to 1910, and that he relinquished this office in order to take up his position at the Imperial Institute. During the first period of service he organized the hospitals connected with the Territorial Force, and enlisted the co-operation of the members of the medical staffs of various civil hospitals for this purpose. While at the Imperial Institute his unusual organizing abilities proved of great value to the country. The Governors have approached the War Office repeatedly during the course of the war with a request that Sir Alfred Keogh should be premitted to return to his important duties at the Imperial Institute. It was pointed out that the development of matters of great national urgency were being delayed by his continued absence. "It was very largely due to Sir Alfred Keogh's intimate knowledge and grasp of all matters connected with the Army Medical Services and the medical profession generally that the medical needs of the Army have been met to the fullest extent," and consequently the War Office was unable to dispense with his services. The Secretary of State for War has now decided, with great regret, that the time has come when he must be permitted to resume his duties at the Imperial Institute of Science and Technology.

While it cannot be denied that the functions Sir Alfred Keogh will now be called upon to fulfil at the Imperial Institute are of national consequence, we cannot assent to the suggestion that these duties are of greater importance to the country than those attaching to the office of Director-General of Army Medical Services. His services to the country in the latter capacity have been of such value that we regard it a matter for regret that he should have

been allowed to hand the office over to Colonel Goodwin at this stage of the Empire's fortunes. Colonel Goodwin's record is a distinguished one, but the change is nevertheless a leap from the known to the unknown.

VENEREAL DISEASE LEGISLATION IN WESTERN AUSTRALIA.

The Legislative Council of Western Australia has under consideration a Bill to amend the Health Act. The Bill has been referred to the Committee of the whole House. A Select Committee, which was appointed by the Legislative Council, has now issued a report dealing with the proposals embodied in the amending Bill. The Committee consists of Messrs. Kingsmill, Duffell and Millington. We gather from the report that certain sections of the public have protested against some of the suggested changes in regard to the control of venereal disease. The chief matter to which exception has been taken, is in connexion with the provisions enabling the Commissioner of Health to take steps to have a person examined, when he has reason to suspect that the person is suffering from a venereal disease. According to the present Act the Commissioner cannot order the examination unless he has received a signed statement, in which the full name and address of the informant are given. It is suggested that the Commissioner should have power to take action in any case when he has reason to suspect that a person is infected. It is held that this provision would have the effect of placing in the hands of one person powers which would enable him to interfere with the liberty of the individual. Some of the witnesses expressed the opinion to the Select Committee that the proposed amendments would transform the Act into a contagious diseases act, and might result in the public arrest by the police of perfectly respectable and innocent girls and women. They cited instances "where such unfortunate happenings have occurred in England and other countries." These witnesses have further contended that the Act as it stands at present, has not had a sufficiently long trial to justify this amendment. The Committee dissents from this view and also points out that there is a vast difference between a contagious diseases act, which has for its primary object the regulation and control of prostitutes and the Bill now before the House, which aims at the preservation of the public health. The amendment would not give the police any power to make a public arrest. The Committee has arrived at the conclusion that the provision included in the present Act defeats the end in view, and therefore supports the suggestion that a signed statement should no longer be required. They favour the introduction of a safeguard against any possible abuse, and ask the Legislative Council to amend the clause in such a way that the Commissioner should seek and act upon the advice of a committee to be composed of two women, one of whom shall be a medical practitioner, himself and another man. The Commissioner should have the right of speaking at the meetings of this committee but not of voting. This safeguard should, however, apply only in those cases in which the compulsory examination of women is contemplated.

The Committee has further dealt with the clause of the Bill which provides for the detention of prisoners for treatment. The Committee recommend that no prisoner should be detained beyond the time allotted for his release from prison, for any purposes connected with the Act, but that before his release, the medical officer of the prison should notify the fact to the Commissioner that the person in question is suffering from venereal disease, and should give his name. The prisoner should be required to report to the Commissioner within three days of his release. The Committee emphasize the advisability of making these provisions apply to industrial schools as well as to prisons, but that persons under remand should not be included. They recommend that the Children's Court should be given the power to order the medical examination of any child appearing before it, if the Court thinks fit to do so.

As it will be necessary to return to the subject of the amending Bill at a later date, there is no need to reproduce the full report of the Select Committee at the present time. It is satisfactory to note that the Committee has taken an intelligent view of the subjects referred to it, and that the sentimental objections, which are based on imaginary dangers, have not been allowed to influence the minds of the members, who are concerned with an important problem in preventive medicine.

University Intelligence.

THE UNIVERSITY OF SYDNEY.

A meeting of the Senate of the University of Sydney was held on March 4, 1918, at University Chambers, Phillip Street, Sydney.

The Warden reported that the *University (Senate) Amendment Act*, 1918, to provide that the members of the present Senate shall continue in office until a day to be proclaimed by the Governor, had been passed by Parliament.

It was reported that Professor Wilkinson, recently appointed to the Chair of Architecture, would not be able to leave England in time to give the lectures for Lent and Trinity Terms, in order to provide teaching for first year students. It was resolved that Mr. J. F. Hennessy, Lecturer in Architecture, be appointed to give the lectures on Elementary Architecture and on Architectural Design, and to give instruction in Architectural Drawing; and that Mr. Norman Carter be appointed Instructor in Freehand Drawing.

A letter was received from Mr. Hugh Dixson transferring to the University on the terms and conditions contained in his previous letter the thirty milligrammes of radium. It was resolved that a letter of thanks be forwarded.

A letter from Professor Wilson reporting a donation from Dr. C. W. Reid of valuable anthropological specimens from the Islands. It was resolved that the gift be acknowledged with thanks.

The degree of Ch.M. was conferred *in absentia* upon Mr. John George Morris Beale.

The following appointments were made:—(*a*) Examiners, Matriculation Examination: Modern Literature—J. V. Randall Miles, B.A., A. E. Bulteau, M.A., Miss Gladys Marks, B.A. Mathematics, F. G. Brown, B.Sc., Latin, W. H. Nicholls, B.A., F. V. Pratt, M.A.; (*b*) Senior Demonstrator Operative Surgery—Harold Norrie, M.B., Ch.M.; (*c*) Demonstrator in Anatomy—Robert Allan, M.D. (Edin.), and A. N. St. G. H. Burkitt, M.B.; (*d*) Lectureship in Accountancy—Wilfred E. Johnson, F.C.P.A.; (*e*) Lectureship in Economic History—G. V. Portus, M.A.; (*f*) Lectureship in Public Administration—P. R. Watts, B.A., LL.B., and F. A. Bland, M.A., LL.B., re-appointed.

Abstracts from Current Medical Literature.

THERAPEUTICS.

(89) Injections of Quinine and Urea Into Goitres.

L. F. Watson discusses the use of injections of quinine and urea for the destruction of thyroid tissue in cases of goitre (*North-West Medicine*, January, 1918). In a series of 125 cases of hyperthyroidism with enlargement of the thyroid gland, he has given the injections to 100 patients. He believes that it is possible to obtain the same relief of the symptoms by destroying less thyroid tissue by the injection of solutions of quinine and urea than is removed in the usual operation of partial thyroidectomy. He asserts that statistics show that the chance of recurrence is diminished and that the injections are less dangerous to life than the operation. He recommends keeping the patient in bed for some weeks when giving the injections. The length of time that the patient remains in bed is determined by the response to treatment and by the severity of the symptoms. Great care must be taken to minimize the pain of inserting the needle by sufficient local anæsthesia. Preliminary injections of a sterile salt solution into the thyroid gland should precede the use of the solution of quinine and urea. Injections of sterile water are also used to lessen the risk of acute hyperthyroidism after the glandular destruction. These preliminary injections are given as long as there is any response to the injection. In respect to his results he states that his injections have been given without any mortality, though some of the patients have had acute toxic symptoms. He issues a special warning against treating young adults suffering from exophthalmic goitre without due precautions. The symptoms were relieved in 85% of his patients and the tumours disappeared in 77% of the 100 patients.

(90) Treatment of Cerebro-spinal Syphilis.

Homer F. Swift replies to the attempts to throw discredit on the intraspinal treatment of syphilis of the central nervous system (*Journ. Amer. Med. Association*, December 22, 1917). He points out that it is not advisable to consider all cases of syphilis of the central nervous system in one class. It is useful to differentiate between the cases exhibiting symptoms of active disease and those with symptoms resulting from scars. No therapeutic remedies will restore scarred nerve tracts or damaged centres. The elimination of syphilitic foci and the arrest of a progressive degeneration should be the aim of therapeutic measures. In judging the results of treatment attention must be directed to the alterations in the clinical signs and symptoms observed at the bedside and to the changes in the reactions observed in the blood and the cerebro-spinal fluid in the laboratory. The author lays much stress upon the laboratory picture of the disease, and contends that the evidence obtained in the laboratory tests is of paramount value in judging the effects of any form of treatment. He states that no progressive paresis revealed by periodic clinical examinations, is manifested in tabetic patients in whom the Wassermann reaction in the blood and cerebro-spinal fluid has been rendered negative by intraspinal injections. On the other hand, when it has not been possible to influence appreciably the reactions in the laboratory tests, the symptoms manifest the progress of the disease. The author insists that the use of salvarsan should be sharply distinguished from the use of serum or of autosalvarsanized serum. He insists that some patients who do not respond to intensive general treatment, improve when intraspinal treatment is added. Other patients show more improvement when general treatment is added to the intraspinal medication. The author argues that there is no question of intraspinal *versus* general treatment, but rather the question of either method alone *versus* combined treatment.

B. C. Corbus deals with the prophylaxis of cerebro-spinal syphilis (*Journ. Amer. Med. Association*, December 22, 1917). He advocates prophylaxis by energetic treatment during the primary stage of syphilis. He believes that lumbar puncture should be practiced and that the cerebro-spinal fluid should be tested in all cases before treatment is concluded. He considers that it is a mistake to confine attention to the healing of the superficial lesions and to tests of the blood. He advocates intensive treatment with salvarsan, mercurial inunctions and spinal drainage for all patients presenting themselves for treatment after the primary period. At each lumbar puncture the cerebro-spinal fluid should be examined by appropriate laboratory tests. In view of the results of his experience, he is of opinion that there would be no further signs of infection and that sub-arachnoid involvement would be unknown if this practice were followed in respect to all patients.

(91) Recovery After Acute Poisoning With Mercury.

G. M. Goodwin gives the history of a woman, aged 22 years, who swallowed two grammes (30 grains) of mercuric chloride (*Journ. Amer. Med. Association*, January 12, 1918). She was given castor oil and mustard shortly afterwards. Vomiting followed. An hour later the stomach was emptied by thorough lavage. Acute nephritis supervened and complete suppression of urine occurred for 24 hours on the fifth day after poisoning. Mercury was present in the urine for two months. Three years later the patient showed slight albuminuria, a normal excretion of phenolsulphone - phthalein, increased concentration of urea in the blood, a high urea index and a delay in the excretion of sodium chloride. Her general health was good. An interesting feature of this patient was that her blood showed a positive Wassermann reaction on the day after taking the poison and a strong Wassermann reaction on her discharge from hospital two months later. Although she had had no treatment for syphilis in the meantime, her blood yielded negative Wassermann reactions at the time of the urinary examinations three years later.

(92) Intraspinal Injections of Epinephrine.

J. Auer and S. J. Meltzer advocate the use of intraspinal injections of epinephrine in patients with low blood-pressures dangerous to life (*Journ. Amer. Med. Association*, January 12, 1918). They point out that the blood-pressure is raised for only a few minutes after intravenous injections. An hour later the blood-pressure is unaltered. Five years previously these authors showed that an intra-spinal injection in a monkey was followed by a raised blood-pressure lasting for several hours. They have recently been able to confirm these results and to extend their experience to children suffering from anterior poliomyelitis. They recommend that the initial dose be not less than three cubic centimetres of one in a thousand solution of epinephrine. The dose should be repeated every few hours. No harmful effects have been noticed in any patient.

(93) Pharmacology of Oil of Chenopodium.

W. Salant gives an account of the mode of action of oil of chenopodium (*Journ. Amer. Med. Association*, December 15, 1917). This medicament is an essential oil obtained by distillation from American wormseed or Jerusalem oak, a weed common in the Southern Atlantic States. The drug was introduced for the treatment of ascariasis, but it has been given during the last few years to several million patients infected with ankylostomiasis. It is now the only drug employed in the eradication of this disease. A small number of cases of poisoning has been noted among the patients, and some of these cases have ended fatally. The oil acts as a local irritant to mucous membranes. It leads to irritative poisoning in the alimentary canal. Its activity is diminished by admixture with other oils and by the previous use of dietaries rich in carbohydrates. Disturbance of renal function is caused by large doses. Fat-soluble dyes, usually excreted in the urine, are not excreted when given along with oil of chenopodium. Albuminuria frequently follows its administration. It depresses the circulation and the respiration. The drug is eliminated in the breath, but cannot be detected in the urine or the bile. The author considers that the exhibition of the oil is contra-indicated in patients with chronic nephritis or with cardiac disease. Lavage can be used when

large amounts of the oil have been swallowed by mistake. No chemical antidote has been found so that treatment of poisoning must be directed against the symptoms. Digitalis and epinephrine have been found useful in counteracting cardiac symptoms.

UROLOGY.

(94) Ureteral Stricture.

Guy L. Hunner deals exhaustively with the question of ureteral stricture on the basis of an experience of 100 tabulated cases, in addition to a small series of recent cases (*Bulletin of Johns Hopkins Hosp.*, January, 1918). In dealing with the ætiology, he recognizes that the majority of strictures of the ureter, excluding those of tubercular origin, are dependent on some distant focus of infection. Since all his patients were women, he naturally enquired into the possible association between ureteral stricture and cervical infections. He is satisfied that this association actually exists in some cases. The ureteral infiltration is usually primary to lesions in the urinary tract. Trauma is also given as a cause, as is syphilis and venous phleboliths. In turning to the symptoms, he states that pain is almost universally present. The pain is most intense in the renal area, but may affect any portion of the body from the level of the diaphragm to the ankles. It usually radiates from the pelvis to the kidneys, to the hip or groin regions, to the sacro-iliac joint and to the thigh and leg. When a wax bulb renal catheter is passed, the patient locates the pain in the kidney region. In addition to pain, there is discomfort in the bladder and frequency of micturition. The urine may be free from pathological constituents, while, if there is an associated pyelitis, it will have the characteristics of that condition. Rigors and fever are common, even when the urine is not infected. Gastro-intestinal symptoms are frequently met with, and usually include nausea, vomiting and tenesmus. The author also refers to some mental symptoms. The stricture is usually situated in the region of the broad ligament, or within 6 cm. of the bladder. The stricture is frequently associated with marked dilatation of the tube and of the renal pelvis. He describes in some detail the changes met with in his cases. He also describes ureteral stricture associated with the pyelitis of pregnancy and of the puerperium. The diagnosis must depend on the history, the examination of the urine, and the local condition on palpation of the regions of the kidney and ureter, especially of the latter through the vagina or rectum. Cystostopy has to be carried out, as much may be learnt from the inspection of the interior of the bladder. The most valuable aids to diagnosis, however, are catheterization of the ureters by specially prepared catheters and Röntgenography. The history is of importance, because, in many cases, ureteral stricture begins early in childhood. Palpation of the ureter at the level of the pelvic brim will often elicit tenderness and a desire to void urine. Care should be exercised in order that confusion with appendicitis may not arise. In dealing with the passage of the renal catheter, which is provided with a wax tip or wax bulb made of pure beeswax, he illustrates, by means of cases how strictures can be diagnosed and located. X-rays are utilized for the ureterogram, thorium being the substance used. He claims to have obtained satisfactory results in suitable cases by dilatation, and describes in detail the methods employed. In a certain number of cases, however, operative interference is necessary. When the stricture is situated high up, a pyelo-ureteroplasty may be carried out. He suggests that implantation of the divided ureter into the colon can be performed when the stricture is low and near the bladder. In the last place, he deals with retrograde dilatation. He obtained perfect results in seven out of nine cases.

(95) Prostatic Calculi.

Herman L. Kretschmer (*Surg., Gynec., Obstet.*, January, 1918) deals with the question of true prostatic calculi, by which he means endogenous or exogenous calculi situated within the substance of the prostatic gland. From a survey of the literature, he has arrived at the conclusion that these calculi occur more frequently than is usually thought, that there is considerable carelessness on the part of authors who report cases, that the symptom-complex is not always typical, and that many urologists neglect to employ the most useful diagnostic means, namely, examination by X-rays. The author gives brief records of eight cases, with skiagrams, and then proceeds to discuss various points of connexion with the condition. He shows that the various views expressed concerning the origin of these calculi, are purely theoretical. A previous urethral infection probably plays an important rôle in the ætiology, although there are many cases on record in which no antecedent infection can be traced. Two of his six patients denied that they had had gonorrhœa, and in the records of three there was no reference to this disease. In turning to the symptomatology, he divides prostatic calculi cases into three groups. The first group comprises cases in which the calculi have produced no symptoms, and are discovered more or less accidentally. In the second group the calculi are associated with benign hypertrophy of the prostate, and the clinical signs and symptoms, as well as the indications for treatment, are those of the hypertrophy. The third group, which concerns him more closely, includes all cases in which the symptoms are due to the presence of calculi. These symptoms are prostatic, urinary, sexual and rectal. The prostatic symptoms include pain, which may be referred or localized, the occasional passage of calculi *per urethram* and abscess formation. The urinary symptoms include increased frequency, dysuria, vesical irritability, incontinence, hæmaturia, retention of urine, etc. The associated pathological conditions include malignant disease of the prostate, benign hypertrophy and calculi in other portions of the urinary tract. The author is satisfied that prostatic calculi tend to recur after removal. In discussing the question of diagnosis, he points out that the only certain means are supplied by examination with X-rays. On rectal examination it is sometimes possible to elicit crepitation, to recognize the stone by palpation, to express the calculus from the prostate and to recognize the associated changes in the prostate. In regard to treatment, he points out that removal of the calculi by massage or by the endoscope has a very limited field of usefulness. For those cases of the third group which call for treatment he recommends perineal prostatectomy.

(96) Hypospadias.

In considering the subject of hypospadias, J. E. Thompson (*Surg. Gyn. and Obstet.*, October, 1917) points out that operation can serve no purpose in the perineal form accompanied by undescended testicles, since the patient is already impotent and sterile. In the balanic variety, operation is indicated only if coition is hindered to an extent that makes impregnation unlikely. Surgical interference in the penile and perineo-scrotal varieties is always justifiable. The most suitable time is between the sixth and ninth years, when the intelligent co-operation of the patient can be turned to account. Operative procedures are classified under two headings: (1) those in which the object is to straighten the penis; and (2) plastic procedures for forming a new urethra. The penis is straightened by a deep transverse incision down to the *corpus cavernosum*. In the balanic and penile forms, flaps may be obtained from the prepuce and sides of the penis, or the urethra may be dissected from its bed and advanced through a tunnel made in the glans. Where the flap method is used, the author prefers two lateral flaps below, to the Mayo method of a single dorsal flap. At the first operation the penis is straightened, at the second the tunnel is made through the glans, and through it is drawn the flap which has been stitched in the form of a tube. Perineal drainage is necessary to prevent sloughing of the new tube. In the posterior penile and perineal forms, supra-pubic drainage is used, a puncture being made with trochar and cannula, and a catheter introduced through the cannula. At least three operations are necessary. At the first the penis is straightened; at the second the penile defect closed except at the urethral orifice, while at the third the urethral orifice is closed. He prefers a modified Russell operation for this, the flaps for the posterior part being taken from the tissues on each side of the groove, and for the anterior part from the dorsum of the prepuce. The flaps thus outlined resemble a clergyman's stole. Chromic catgut is used to suture the flaps together, and the new urethra is then buried by uniting the skin margins.

HEALTH OF MELBOURNE.

The Health Committee of the city of Melbourne issued their annual report for the year 1916 several months ago. Owing to the limited size of *The Medical Journal of Australia*, it has been impossible to deal with this report at an earlier date.

The report proper takes the form of a summary of the various reports issued by the Officers of the Department. The report of the Officer of Health, Dr. T. W. Sinclair, and that of the Director of the Bacteriological Laboratory, Dr. R. J. Bull, contain details practically covering the whole of the public health administration work of the city.

The estimated mean population of the city of Melbourne was 105,182. Dr. Sinclair has had some difficulty in determining the actual birth-rate on account of the uncertainty concerning the usual place of residence of several patients in the Women's Hospital who gave birth to infants. He therefore deducted all the births which had taken place in the Hospital. On this basis, the birth-rate worked out at 21.67 per 1,000 of population. The birth-rate in the whole metropolitan district was 25.51, and in the whole of the State was 24.30.

In dealing with the death-rate, Dr. Sinclair has included infants who were born and died in the Women's Hospital and other institutions within the city, deceased persons concerning whose death an enquiry was held at the Morgue, when a city address was given as the usual place of residence, and consumptives who were residents of the city, but died in sanatoria outside the city area. The rate calculated on this basis was 12.93. The death-rate for the whole metropolis was 12.18, and for the whole State was 11.70. It is interesting to note from the figures published by the Government Statist that the death-rate of Melbourne in 1916 was higher than that of Sydney and Perth, and lower than that of Brisbane, Adelaide and Hobart.

Of the 1,361 persons who died, 207 succumbed to diseases of the heart and blood vessels, probably excluding cerebral hæmorrhage, 110 died of tubercular disease, 94 died of Bright's disease, 94 died of cancer, 92 died of pneumonia, 91 of prematurity, 83 of developmental diseases, 73 of diarrhœa, dysentery and enteritis, 70 of old age, 62 of "other nervous diseases," 48 of accident or negligence, 47 of bronchitis, 32 of epidemic cerebral meningitis, 29 of diphtheria *inter alia*. The infantile mortality based on the records, exclusive of infants who died at the Women's Hospital, was 89 per 1,000 births. The total number of deaths was 204. At the present time, when the importance of the conservation of healthy infant life is apparent to every thinking person, the sociologist turns to the classified causes of death in infants for guidance. It will be noted that he is faced with insuperable difficulties when he learns that 30.85% of the deaths were due to prematurity and 26.8% to developmental diseases. In other words, the information available teaches him that in 57.65% of all the deaths, the actual causes are not known. He has something to go on in regard to 18% of the deaths, which he learns were due to diarrhœa and enteritis. In a further 16.2% the deaths were due to infective processes or other preventible causes.

The total number of cases of scarlet fever notified was 136. The attack rate was consequently 1.29 per 1,000 of population. In the years 1909 and 1910 there was a marked recrudescence of scarlatina. This was followed by four years of low incidence. In 1915 62 cases were notified and in the year under review the disease had again assumed epidemic proportions. Only one death occurred. It is interesting to note that scarlet fever in all the Australia States maintains its mild character, which has rarely been broken. Dr. Sinclair discovered that 97 of the cases occurred as single cases. He does not deal with the method of spread, whether this took place at school or when children congregated at play. Fourteen of the cases occurred in institutions, while in at least three cases the infection was probably contracted outside the city. The Council's female inspector visited a large number of homes of the patients "to ensure that the necessary isolation measures had been taken."

The incidence of diphtheria has risen considerably during the past 20 years. In 1916 there were 581 cases; in 1911 there were 485 and in 1915 463. In all other years the numbers were considerably lower. The incidence rate was 5.52 per 1,000 of population. Dr. Sinclair points out the disease was very prevalent not only in Victoria but also in the adjoining States. In the majority of instances only one person was affected in a household. There were 48 families which yielded two patients, nine which yielded three, three which yielded four and two which yielded five. Thirty-two of the cases arose in hospitals and eight in other institutions. A group of four cases was discovered among children attending a small private school. Dr. Sinclair adopted the expedient of closing the school and of having the premises disinfected. We hold that it is wiser to investigate the bacteriology of the fauces of the children attending school and to apply isolation to all those found to be harbouring the Klebs-Löffler bacillus, than to close the school and incidentally to allow the infected children to disseminate the disease in the gutter or at the picture show. The soundness of this method is illustrated in the case of a foundling hospital, where the disease had appeared among the infants. A bacteriological examination was carried out of the faucial and nasal mucus, with the result that it was discovered that three persons were harbouring bacilli. These persons were removed to the Infectious Diseases Hospital and no further cases occurred. The total number of deaths was 29, and consequently the case mortality was 4.99%.

There were 23 cases of enteric fever notified during the year. The incidence of this disease has been low since 1911. In 1910 there were 178 cases. In three cases it was thought the infection was probably derived from a situation outside the city. In 11 of the 23 cases the patients were living in houses which were more or less insanitary. There were four deaths.

Acute anterior poliomyelitis was notified on four occasions only. One of the patients died. Dr. Sinclair has issued certain instructions for the purpose of preventing the spread of this disease. These instructions are very excellent, but it is extremely doubtful whether the average citizen would pay any attention to them.

During the course of the year there were 87 cases of epidemic cerebro-spinal meningitis notified to the health authority. Seventeen of these occurred in soldiers. In 1915 the disease was first rendered notifiable. During four and a half months no less than 64 cases were notified. There were 32 deaths, and consequently the case mortality was 45.7%. In 16 instances Dr. Sinclair was satisfied that the infection arose from contact with soldiers in the military camps. Stringent regulations, having for their object the prevention of this disease, were issued on March 15, 1916.

The number of cases of pulmonary tuberculosis notified by medical practitioners was 120. The Council's female inspector visited the houses of these patients and advised them in regard to measures for their own improvement and for minimizing the risk to other persons. Dr. Sinclair was in constant communication with the Department of Public Health and with the Medical Superintendents of the various sanatoria and of the Austin Hospital, and was consequently made aware of the movements of all patients. During the course of the year he investigated 210 cases of pulmonary tuberculosis. It appears that the disease had arisen within the city in 88 instances and, in 16 other instances, within the State. It was ascertained that tuberculosis had occurred in the family of the patient in 29 cases, and in the house where the patient was living in 11 cases, while five of the patients had been working together with other consumptives.

The total number of deaths from tuberculosis was 110. Of these, 97 were instances of pulmonary tuberculosis. The number of deaths from pulmonary tuberculosis has varied between 76 and 106 per annum since 1911. The death-rate per 1,000 of population in 1916 was 1.04 and in 1915 0.84. Since 1904 this rate has not exceeded 1.71, and since 1909 it has been not higher than 1.27.

The staff of the Council carried out disinfection in 956 rooms which had previously contained patients suffering from various infective diseases. In addition, a considerable amount of disinfection was carried out for the Department of Defence.

A large number of samples of food was purchased for the purpose of having an analysis made. There were 298

samples of milk. Of these, 20 were found to be adulterated. In three instances the adulteration took the form of the addition of formaldehyde. Dr. Sinclair does not mention the form of adulteration in the other cases, but the Public Analyst states that in two cases the percentage of total solids, solids not fat and fatty solids were below the standard, in seven the total solids and solids not fat, in three the total solids and the fatty solids, in six the solids not fat and in the one the fatty solids were below the standard. Proceedings were taken in 18 cases of food adulteration. They were successful in 13, and fines and costs, amounting to £60 12s. 6d., were inflicted. It is unnecessary to refer again to the unsatisfactory nature of the milk standards or to the totally inadequate fines inflicted in cases of undoubted adulteration of milk.

During the course of the year, a large number of premises, including restaurants, bakeries, butchers' shops, etc., were inspected. The sanitary condition of 1,045 houses was found to be defective and the premises were condemned. In 54 instances the premises were demolished at the instigation of the Council. In four cases the kitchens attached to restaurants were found to be in a very dirty condition. The proprietors were therefore prosecuted and fined. Fines were also imposed on 19 persons for smoking in kitchens or other places where food was prepared. Two restaurant-keepers had to pay heavy fines for having unwholesome food, which had been gnawed by rats on the premises. On two further occasions restaurant-keepers were fined for throwing offensive matter into lanes adjoining their premises. A certain amount of food which was unfit for human consumption, was seized and destroyed.

The number of premises registered for the purpose of conducting noxious trades was 51. There were 290 applications for the approval of premises to be used as factories, and in 261 the approval was granted. In other cases the applications were held over pending structural and other alterations being completed to the satisfaction of the Council.

The Council's rat staff destroyed 15,049 rats and 260 mice. Twelve rats were submitted for bacteriological examination to the University Laboratory. Ten of these rats were healthy and two were found to be infected with rat leprosy. Dr. Sinclair also adds some details concerning the steps taken to abate the smoke nuisance, and also concerning the control kept on common lodging-houses.

The Council's female inspector visited during the course of the year 2,090 infants. She found that 1,794 were breast fed, 47 were being fed on cow's milk, 136 received *allaitement mixte*, 109 were fed on other foods and four had never been fed. He records that, owing to unforseen circumstances, the Talbot Milk Institute was compelled to suspend the supply of milk to infants during the year.

Dr. R. J. Bull, the Director of the Bacteriological Laboratory, gives a summary of the work carried out for the Melbourne City Council. This work embraces the detection of diphtheria bacilli, meningococci and tubercle bacilli. The bacteriology of 12 samples of ice cream was also studied. In the cleanest sample there were 13,000 organisms per cubic centimetre, while in the worst sample there were 3,833,000 bacteria. He states that the high figure in the samples obtained direct from the factories was mainly due to excessive numbers of lactic acid bacilli. This could be obviated by heating the milk and cream before manufacture and by exercising care in cleaning and sterilizing the utensils and apparatus employed. That these precautions had not been strictly observed was suggested by the appreciable numbers of excremental bacteria present in all but two of the samples. These bacteria were probably derived from cow dung. There appeared to be no reason why, with proper precautions, a much higher and more uniform standard should not be maintained.

THE BLIND AND THE DEAF.

The Tasmanian Society for the Blind and the Deaf and Dumb and the Hobart Braille Writers' Association have published their annual reports for the year ending January 31, 1917, and for the year 1917 respectively in one little pamphlet. The Institution at which the sightless and mute little ones are cared for and educated is situated in North Hobart, and comprises three departments, the School for the Blind, the School for the Deaf and the Industrial Department. In the first there were ten pupils. It is stated that the appointment of an additional teacher has enabled the Committee to improve the organization. The work of the children has benefited by this arrangement. In the School for the Deaf there were 42 children, 26 being boys and 26 being girls. The teaching staff has also been extended by the appointment of two experienced lady teachers. Much difficult work is said to have been accomplished.

The health of the school children has been good, with the exception of a few cases of minor importance.

The children were allowed to return to their homes for the mid-summer vacation, and free railway passes were supplied by the Commissioner of Railways. Many letters were received during and after the holidays from parents, expressing their gratitude for the progress made by the children, and for the loving care and attention bestowed upon them.

In the Industrial Department 21 workers were employed and three new blind workers were admitted. The value of the goods manufactured amounted to £1,623. The workers exhibited specimens of their brush, mat and basketware at an Industrial Exhibition. This work was greatly admired. The Committee speak very highly of the services rendered by the officers of the various departments and pay a high tribute to Mrs. Graham, the excellent Matron.

In the Hobart Braille Writers' Association's report it is stated that during the course of 1917 51 volumes were transcribed into Braille. Mrs. Grove, the Vice-President, was responsible for 15 volumes and Mrs. Hudson for 10. The Committee point out that, when a Braille type machine is used, it is possible by working steadily, to produce one sheet in half an hour. Each volume contains about 80 sheets, and an ordinary book, when transcribed, is spread over five or six volumes. From these figures it would appear that Mrs. Grove, in transcribing 15 volumes, must have written over 6,000 sheets in one year.

We gather that the postal authorities have undertaken to carry Braille magazines and books within Tasmania free of cost. No less than 384 magazines and 203 volumes were sent to readers in this way. The residents of the Institution and other blind persons in Hobart read 245 volumes during the year. One blind scholar read 81 volumes. Only one worker is engaged in the transcription of music into Braille. The library has been extended by volumes obtained from England, and a weekly edition of the *Daily Mail* has been placed at the disposal of the readers. The Government contributed a draft of £20 to this excellent Institution. Unfortunately, the annual picnic planned for the Braille writers could not take place on account of wet weather. The President, however, placed her home at their disposal, and a pleasant afternoon was spent.

We regret to note that the expenditure exceeded the income of the Institution by some £255. Subscriptions, donations and bequests to the extent of just over £800, a Government subsidy of £300 and school fees aggregating £1,054 represent the chief items of income.

Naval and Military.

CASUALTIES.

The 385th list of casualties, which was issued on March 8, 1918, eleven days after the previous list, contains the name of one medical officer. Captain Hugh Compson Trumble is suffering from the effects of gas poisoning. This casualty is included under the heading of "wounded—gas."

HONOURS.

In the *Commonwealth of Australia Gazette*, No. 31, of March 7, 1918, various extracts from the *London Gazette* relative to the award of honours have been published.

Awarded the Distinguished Service Order.

Major Sydney Vere Appleyard, A.M.C.

Major William Wallace Stewart Johnston, M.C., A.M.C.

Major William Bannerman Craig, A.M.C.
Major William Allan Hailes, A.M.C.
Major Harrie Bertie Lee, M.C., A.M.C.
Major Robert Maxwell McMaster, A.M.C.

Awarded the Military Cross

Captain Vernon Carlisle Brown, A.M.C.
Captain Charles Hallily Kellaway, A.M.C.
Captain Patrick Joseph Francis O'Shea, A.M.C.
Captain Douglas Lewis Barlow, A.M.C.
Captain John Herald Balfour Brown, A.M.C.
Captain Stuart Galloway Gibson, A.M.C.
Captain Stanley Arthur Railton, A.M.C.
Captain Eric William Beresford Woods, A.M.C.

Awarded a Bar to the Military Cross.

Captain Patrick Joseph Francis O'Shea, M.C., A.M.C.

APPOINTMENTS.

The following appointments, etc., have been published in the *Commonwealth of Australia Gazette*, No. 31, of March 7, 1918:—

Army Medical Corps.

To be temporary Colonel—

Lieutenant-Colonel M. H. Downey, whilst holding appointment of Assistant Director Medical Services, 5th Division. 26th October, 1917.

Major H. V. P. Conrick, D.S.O., to be Senior Medical Officer, No. 2 Command Depôt, and to be temporary Lieutenant-Colonel whilst so employed. 20th November, 1917.

Major R. S. McGregor, from Deputy Assistant Director Medical Services, 5th Division, to be Senior Medical Officer, Sutton Veny Camp, Australian Imperial Force Depôts in United Kingdom, and is granted the temporary rank of Lieutenant-Colonel whilst so employed. 20th November, 1917.

Major J. K. Adey, from Deputy Assistant Director, Medical Services, Headquarters, Australian Imperial Force Depôts in United Kingdom, to be Senior Medical Officer, No. 3 Command Depôt, and is granted the temporary rank of Lieutenant-Colonel whilst so employed. 20th November, 1917.

Australian Imperial Force

Army Medical Corps.

To be Majors—

Honorary Major P. S. Webster, Australian Army Medical Corps Reserve. Dated 20th January, 1918.

Honorary Major C. L. Lempriere, Australian Army Medical Corps Reserve. Dated 22nd February, 1918.

Honorary Captain E. C. T. Smith, Australian Army Medical Corps Reserve. Dated 29th January, 1918.

To be Captains—

Captain (provisional) F. E. Keane, Australian Army Medical Corps. Dated 10th March, 1918.

Honorary Captain W. J. Beveridge, Australian Army Medical Corps Reserve. Dated 21st January, 1918.

Honorary Captain H. P. Clark, Australian Army Medical Corps Reserve. Dated 29th January, 1918.

Honorary Captain J. McF. Rossell, Australian Army Medical Corps Reserve. Dated 17th January, 1918.

Honorary Captain R. F. Matters, Australian Army Medical Corps Reserve. Dated 28th January, 1918.

Honorary Captain F. C. Robertson, Australian Army Medical Corps Reserve. Dated 22nd January, 1918.

Honorary Captain A. R. Bean, Australian Army Medical Corps Reserve. Dated 14th February, 1918.

Thomas Bennett Clouston. Dated 12th January, 1918.

Bryan Aloysius Veech. Dated 17th January, 1918.

Francis Richard Meagher. Dated 26th January, 1918.

Frederick William Leslie Liggins, William Francis Digges La Touche, and Arthur Cecil Moran. Dated 30th January, 1918.

George Elliott Hobson. Dated 1st February, 1918.

John Newton Webb. Dated 12th February, 1918.

Charles Maxwell. Dated 18th February, 1918.

Termination of Appointments.

The appointments of the undermentioned officers are terminated from dates shown opposite names:—

Colonel C. T. C. De Crespigny, D.S.O. Dated 13th January, 1918. (This cancels the notification respecting termination of appointment of Lieutenant-Colonel C. T. C. De Crespigny, D.S.O., which appeared in Executive Minute No. 99/1918, promulgated on page 238 of *Commonwealth of Australia Gazette*, No. 15, of 7th February, 1918.)

Major R. W. Hornabrook. December 5, 1917. (This cancels the notification respecting termination of appointment of Captain R. W. Hornabrook which appeared in Executive Minute No. 33/1918 promulgated on page 36 of *Commonwealth of Australia Gazette* No. 4, of 12th January, 1918.)

Lieutenant-Colonel J. B. St. V. Welch, D.S.O. 6th February, 1918.

Major J. A. O'Brien. 13th February, 1918.

Major H. C. E. Donovan. 17th January, 1918.

Captain A. E. Deravin. 4th February, 1918.

Captain G. H. Burnell. 5th February, 1918.

Captain P. N. Whitehead. 27th December, 1917.

Captain A. J. McShane. 20th February, 1918.

Captain E. R. Mackay. 25th February, 1918.

Captain C. H. Smith Hozier. 1st April, 1916.

Australian Military Forces.

Grant of Honorary Rank.

His Excellency the Governor-General, acting with the advice of the Federal Executive Council, has been pleased to approve of the undermentioned officers, who have served in the Australian Imperial Forces as commissioned officers, having the rank held by them in the Australian Imperial Force confirmed as honorary rank in the Australian Military Forces, as follows:—

Officers who, on appointment for service outside Australia, were serving, and are now serving, in the Australian Military Forces.

1st Military District.

To be Honorary Lieutenant-Colonel—

Captain T. G. Ross, D.S.O., Australian Army Medical Corps. Dated 25th February, 1916.

Captain W. A. Fraser, D.S.O., Australian Army Medical Corps. Dated 8th November, 1916.

2nd Military District.

To be Honorary Lieutenant-Colonel—

Captain J. H. Phipps, D.S.O., Australian Army Medical Corps. Dated 6th February, 1916.

Captains A. H. Tebbutt, D.S.O., and J. B. St. V. Welch, D.S.O., Australian Army Medical Corps. Dated 25th February, 1916.

Captain H. R. G. Poate, Australian Army Medical Corps. Dated 20th February, 1917.

To be Honorary Majors—

Captain H. C. E. Donovan, Australian Army Medical Corps. Dated 27th April, 1917.

Captain (provisional) L. Cowlishaw, Australian Army Medical Corps. Dated 1st December, 1916.

Captain (provisional) N. K. Robertson, Australian Army Medical Corps. Dated 29th June, 1916.

3rd Military District.

To be Honorary Lieutenant-Colonel—

Major C. C. MacKnight, Australian Army Medical Corps. Dated 25th February, 1916.

Captain J. J. Black, D.S.O., Australian Army Medical Corps. Dated 20th November, 1916.

Captain E. R. White, Australian Army Medical Corps. Dated 18th September, 1917.

To be Honorary Majors—
Captain J. A. O'Brien, Australian Army Medical Corps. Dated 1st March, 1916.
Captain (temporary) H. P. Catford, Australian Army Medical Corps. Dated 24th August, 1917.
Captain R. W. Hornabrook, Unattached List. Dated 24th August, 1917.
Captain A. E. Morris, Australian Army Medical Corps Reserve. Dated 8th November, 1915.
Lieutenant (provisional) D. C. Pigdon, 51st (Albert Park) Infantry. Dated 1st December, 1916. 4th Military District.

To be Honorary Colonel—
Major C. T. C. De Crespigny, D.S.O., Australian Army Medical Corps. Dated 18th September, 1917.

To be Honorary Major—
Captain J. W. Browne, Australian Army Medical Corps. Dated 1st October, 1915. 6th Military District.

To be Honorary Major—
Captain (temporary) J. Sprent, M.C., Australian Army Medical Corps. Dated 29th January, 1917.

Correspondence.

THE EXAMINATION OF RECRUITS AND RETURNED SOLDIERS.

Sir,—Allow me, through your esteemed *Journal*, to direct attention of the members of our profession to some irregularities in examination of the recruits and returned soldiers, which, on one side, may put an unduly hard burden on the community by enormously increasing the expenses of war pensions, causing, on the other side, a grave injustice to our noble defenders on their return home after being discharged from the ranks of the army as unfit.

I have before me a copy of the "Proceedings of a Medical Board on an Invalid" of a Military Hospital in England.

In this document, bearing signatures of three Captain Surgeons and six Major Surgeons, all Australians, including high military medical authorities, a man is attested as "Unfit for all service permanently," but the question whether the Board recommends his discharge as permanently unfit is answered in the negative. (Q. 24, Army Form B179, for war pension purposes.)

This man has been granted a pension for six months and has been sent to me by the military authorities at the end of this period to be examined for the war pension purposes. I found him incapacitated for work, but it is stated in the above mentioned document (Question 8) that the origin of the disability has taken place in Australia, prior to enlistment, in next clause, causation and history of the disability is stated to be: "Complains (?) of lumbago and obesity," and that military service has not played any part in its production.

Why then has the man been granted pension, even for six months?

The man is stated to be unfit prior to enlistment—why then has he been accepted for active service?

Granting he was fit for military service at the front at the time of his enlistment, on the 2nd February, 1915, and "unfit for all service permanently" on 14th April, 1917, and is still unfit for work at the present time, I declared him entitled for the war pension, but the position appears not to be in any way satisfactory.

The conclusion I arrived at from the case, is that on passing men as fit on enlistment we have to be particularly careful to state on the attestation paper if there was any ailment in existence at that time, which statement would greatly facilitate the subsequent examination for discharge on pension purposes, when the necessity arises.

But what is still more important at the present moment: no man can be and should be stated to contract the disease or being unfit for work before he enlisted and before leaving Australia (as it was done in above-mentioned case), after he has been on active service at the front for two or three years, and discharged without further ceremony, unless any notes to that effect appear on his enlistment papers, without grave injustice being inflicted on our returned and disabled soldiers.

Yours, etc.,
COMMONWEALTH MEDICAL REFEREE.

March 1, 1918.

JONES v. LE COUTEUR.

Sir,—Under this heading I see another letter from Dr. R. Jones, in which he refers to me.

I refuse absolutely to enter into a controversy with him. From this he appears to draw some satisfaction. To this he is welcome.

The facts concerned are sufficiently well known (to anyone interested in otology) to make boring reading. If Dr. R. Jones feels aggrieved he has his remedy in an appeal to the ethical committee. There I shall be delighted to traverse the whole of the facts of the case as well as his actions in the matter. As far as I am concerned this correspondence is ended.

Yours, etc.,
FRANK ANDREW.

22 Collins Street, Melbourne,
March 5, 1918.

Obituary.

FRANCIS JOSEPH KEYES.

It is with great regret that we have to record the death of Francis Joseph Keyes, which took place on February 11, 1918.

During the past few years his health had been impaired by repeated attacks of pneumonia, which led to the development of a bronchiectasis. In the early part of January he was removed to a private hospital in Melbourne, but in spite of assiduous and skilful attendance, he lost ground and succumbed to his illness a month later.

Francis Joseph Keyes was born in County Mayo in 1859. He was educated by the Christian Brothers in Dublin. He matriculated at the Royal University of Ireland, and in 1885 obtained the degrees of M.D., Ch.M., and L.M. During the following two years he practised at Castlebar in County Mayo, and then came out to Australia, arriving in August, 1887. He carried on a practice at Nathalia, Victoria, from the time of his arrival until the beginning of the present year—a period of 30 years. About ten years ago his colleague at Nathalia decided to leave the town. Francis Joseph Keyes made arrangements to buy the practice on the condition that the lodge was also transferred. Some of the members of the Lodge Executive held strong views on the Irish question, and refused to agree to the transfer. The negotiations which followed failed, and in the end fresh arrangements were made for the sale of the private practice of his colleague. An unsuccessful attempt was made by the Executive of the Lodge to obtain the services of another medical man. After the lapse of a short time, he received a mild notification from the Secretary of the Lodge to the effect that he had been appointed their medical officer. He replied, accepting the position offered him on the condition that the list of members to be attended should be submitted to him for revision. He informed the Secretary that he would not hesitate to strike off from the list the name of any person whom he considered should not be a lodge member. This action gave rise to violent opposition. The General Secretary of the Order was summoned from Melbourne, and there was a great commotion in the ranks of the well-to-do members of the Lodge. Francis Joseph Keyes was adamant, and, in spite of all the opposition, carried his point. The result of his action was that about 50% of the members had their names removed from the lodge list.

Francis Joseph Keyes enjoyed great popularity among the residents of the district. He was generous to a fault, a sympathetic practitioner, and untiring in his devotion to his patients. No person in poor circumstances ever appealed to him for assistance without obtaining the same skilful attendance that he accorded to his best paying patients. He served as Medical Officer of Health for the Western and Moira Ridings of the Shire of Numurkah, and was a Justice of the Peace.

Births, Marriages and Deaths.

The charge for inserting announcements of Births, Marriages and Deaths is 5s., which sum should be forwarded in money orders or stamps, with the notice, not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.

MARRIAGE.

DOWLING-HOWELL—On January 15, 1918, at Goulburn, Norman Dowling, M.R.C.S., Eng., L.R.C.P., Lond., of Young, N.S.W., to Gwendoline Florence, eldest daughter of Rev. Canon and Mrs. W. P. Howell, of Goulburn.

Books Received.

THE BASIS OF SYMPTOMS.—The Principles of Clinical Pathology—by Dr. Ludolph Krehl, authorized translation from the seventh German edition, by Arthur Frederic Beifeld, Ph.B., M.D., with an Introduction by A. W. Hewlett, M.D.; Fourth American Edition; 1917. Philadelphia: J. B. Lippincott Company. Sydney: Angus & Robertson, Ltd. Royal 8vo., pp. 540. Price, 21s.

NOTES ON PHARMACOLOGY, by A. C. H. Rothera, M.A., M.R.C.S., D.Sc., Second Edition, edited by W. A. Osborne, M.B., D.Sc.; 1918. Melbourne: W. Ramsay & Co. Royal 8vo., pp. 103.

FIELD SANITATION, by C. G. Moor, F.I.C., F.C.S., and E. A. Cooper, D.Sc.; 1918. London: Baillière, Tindall & Cox. Demy 8vo., pp. 230, with 83 illustrations. Price, 2s. 6d. net.

Medical Appointments.

Dr. D. A. Campbell has been appointed Acting Medical Superintendent of the Yarra Bend Hospital for the Insane, Victoria, during the absence of the Medical Superintendent, Dr. J. Steele, (B.M.A.).

Dr. J. L. Thompson (B.M.A.) has been appointed Medical Officer of Health for the Borough of Castlemaine, Victoria.

Dr. J. W. Tarleton (B.M.A.) has been appointed Acting Medical Officer of Health for the Walwa and Corryong portions of the Shire of Towong, in Victoria.

Dr. C. W. Greene (B.M.A.) has been elected to succeed the late Dr. E. W. Deane as Medical Officer of Health of the Shire of Tullaroop, in Victoria.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xvii.

Royal Hospital for Women, Paddington, Resident Medical Officer.

Renwick Hospital for Infants, City, Resident Medical Officer.

Medical Appointments.

IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
VICTORIA. (Hon. Sec., Medical Society Hall, East Melbourne.)	All Friendly Society Lodges, Institutes, Medical Dispensaries and other contract practice. Australian Prudential Association Proprietary, Limited. National Provident Association. Life Insurance Company of Australia, Limited. Mutual National Provident Club.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Medical Officers to the Selwyn Hospital, North Queensland. Brisbane United Friendly Society Institute Cloncurry Hospital.
SOUTH AUSTRALIA. (Hon. Sec., 3 North Terrace, Adelaide.)	The F.S. Medical Assoc., Incorp., Adelaide. Contract Practice, Appointments at Renmark.
WESTERN AUSTRALIA. (Hon. Sec., Health Department, Perth.)	All Contract Practice Appointments in Western Australia.
NEW SOUTH WALES. (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Australian Natives' Association. Balmain United F.S. Dispensary. Canterbury United F.S. Dispensary. Leichhardt and Petersham Dispensary. M.U. Oddfellows' Med. Inst., Elizabeth Street, Sydney. Marrickville United F.S. Dispensary. N.S.W. Ambulance and Transport Brigade. North Sydney United F.S. People's Prudential Benefit Society. Phœnix Mutual Provident Society. F.S. Lodges at Casino. F.S. Lodges at Lithgow. F.S. Lodges at Parramatta, Auburn and Lidcombe. Newcastle Collieries — Killingworth, Seaham Nos. 1 and 2, West Wallsend.
TASMANIA. (Hon. Sec., Belrive, Tasmania.)	Medical Officers in all State-aided Hospitals in Tasmania.
NEW ZEALAND: WELLINGTON DIVISION. (Hon. Sec., Wellington.)	Friendly Society Lodges, Wellington, N.Z.

Diary for the Month.

Mar. 19.—N.S.W. Branch, B.M.A., Medical Politics Committee; Organization and Science Committee.
Mar. 20.—W. Aust. Branch, B.M.A.
Mar. 20.—South Sydney Med. Assoc. (N.S.W.).
Mar. 20.—Western Suburbs Med. Assoc. (N.S.W.).
Mar. 21.—N.S.W. Branch, B.M.A., Return of Ballot Papers for Election of Branch Council.
Mar. 22.—Q. Branch B.M.A. Council.
Mar. 22.—N.S.W. Branch, B.M.A., Annual Meeting.
Mar. 26.—N.S.W. Branch, B.M.A., Council.
Mar. 27.—Vic. Branch, B.M.A., Council.
Apr. 2.—N.S.W. Branch, B.M.A., Council (Quarterly).
Apr. 5.—Q. Branch, B.M.A.
Apr. 9.—N.S.W. Branch, B.M.A., Ethics Committee.
Apr. 9.—Tas. Branch, B.M.A., Council and Branch.
Apr. 10.—Vic. Branch, B.M.A.
Apr. 11.—Vic. Branch, B.M.A., Council.

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this Journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to *The Medical Journal of Australia* alone, unless the contrary be stated.

All communications should be addressed to "The Editor," *The Medical Journal of Australia*, B.M.A. Building, 30-34 Elizabeth Street, Sydney, New South Wales.